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RE-ENGINEERING THE UNITED STATES MARINE CORPS SPECIAL EDUCATION PROGRAM (SEP)

by

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and
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March 1998

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Within the United States Marine Corps, there exist billets (jobs) that require specialized graduate education. Department of Defense agencies submit requests to add billets to their organizational structure. Marine Corps Orders require for every billet added another must be removed elsewhere to balance manpower requirements. Additionally, continuing validation of the billets is required to ensure compliance with Secretary of Defense criteria. Problems in the key function, billet validation, include inflexible, inefficient, and ineffective processes, and nebulous validation criteria.

We address these problems by developing a centralized decision support system to be used in a distributed collaborative setting. The objectives of the Special Education Program (SEP) Billet Validation System are to allow SEP billet holders and commands to evaluate and justify existing SEP billets, to assist Military Occupational Specialty Sponsors in identifying manpower reductions, and to validate the graduate education requirement for existing SEP billets. Methods from Multi-Criteria Decision Making (MCDM) (specifically Multi-Attribute Utility Theory (MAUT) and the Analytical Hierarchy Process (AHP)) are used to formalize Secretary of Defense requirements and quantify relative ratings of billets. The system employs a Web Browser front-end application to allow the administrative review process to be performed in a parallel manner.

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ABSTRACT

Within the United States Marine Corps, there exist billets (jobs) that require specialized graduate education. Department of Defense agencies submit requests to add billets to their organizational structure. Marine Corps Orders require for every billet added another must be removed elsewhere to balance manpower requirements. Additionally, continuing validation of the billets is required to ensure compliance with Secretary of Defense criteria. Problems in the key function, billet validation, include inflexible, inefficient, and ineffective processes, and nebulous validation criteria.

We address these problems by developing a centralized decision support system to be used in a distributed collaborative setting. The objectives of the Special Education Program (SEP) Billet Validation System are to allow SEP billet holders and commands to evaluate and justify existing SEP billets, to assist Military Occupational Specialty Sponsors in identifying manpower reductions, and to validate the graduate education requirement for existing SEP billets. Methods from Multi-Criteria Decision Making (MCDM) (specifically Multi-Attribute Utility Theory (MAUT) and the Analytical Hierarchy Process (AHP)) are used to formalize Secretary of Defense requirements and quantify relative ratings of billets. The system employs a Web Browser front-end application to allow the administrative review process to be performed in a parallel manner.

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I. INTRODUCTION

A. BACKGROUND

The authors discovered eight reasons why the Marine Corps fills specific billets with graduate educated Marines. These billets must be periodically validating to ensure that they are meeting Department of Defense requirements. Criteria were generated to transform an inefficient validation system into a semi-structured decision problem. This decision support system was mounted on a Web server to allow Manpower Analysts to be geographically dispersed, yet remain in collaboration.

1. Education and the Military

> It is obvious that theoretical knowledge will not suffice, but that here the qualities of mind and character come to a free, practical, and artistic expression, although schooled by military training and led by experience from military history or from life itself.
> -Field Marshal Helmuth Graf von Moltke

The American Serviceman forms the core of America's flexibility to respond to world crises. Soldiers, Marines, Sailors, and Airmen are expected to adapt, improvise, and triumph in any situation they might encounter in a complex world. Such assets are not born; they are grown, nurtured, and trained.

The Naval Postgraduate School (NPS) exists to provide Department of Defense relevant education to meet the technological requirements of modern warfare that cannot be replicated at civilian institutions. (Miller, p 17) Officers from all the Services are sent

to NPS to get graduate education in 42 curricula. The United States Marine Corps has historically sent approximately 75 Marines each year to NPS and another 30 Marines to get advanced degrees at other institutions. Brigadier General Robert Blackman, Director of the Marine Corps University, has stated that it is important to examine why these officers are taken out of their regular jobs for a few years and placed into a rigorous academic environment. (Blackman, 1998)

Education and the military have been inextricably linked ever since the first tribesman returned from a battle, examined why he lost, and determined what needed to be done to ensure that he didn't lose the next time. The first concrete link between study and military action was developed by the Prussians. The Prussian Army was beaten badly in 1806 by Napoleon and the subsequent self-examination revealed flaws in their officer corps. The Prussians created formal educational programs to remedy this embarrassment and placed such value on the academic experience that any senior officer in the Prussian Army could not "...hold his post without having gone through a period of intensive study." (Van Crevald, p 100)

The American marriage of education and warfare has its roots in the foundation of the first military academies. The United States Military Academy was established in 1802 primarily as an engineering school. Science was not reputable at the turn of the century so West Point was created with the joint purpose of training military engineers and engineering instructors for civilian institutions. (Preston, p 22) Similarly, the United States Naval Academy was created in 1845 for the main purpose of developing the then new field of Steam Engineering. Beyond the obvious application of ships' propulsion,

the country again benefited from the training of engineers and instructors in the leading technology of the age. (Clark and Sloan, p 16) [As a side note, the Naval Postgraduate School was created in 1909 for the primary purpose of training engineers to repair and recover the Great White Fleet that was broken down on the other side of the world. (Minott, 1996)] During the Civil War era, the Army sent officers to study medicine, ordinance, and engineering at civilian universities. The Morrill Act established Land Grant Universities with the requirement that they teach military tactics. (Glick, p 42) The link between education and the military has continued to the present. In 1971 the Veterans' Administration ran the largest medical complex in the country and provided the training for one half of the internships, residencies, and graduating physicians. (Glick, p 43) Today, most universities have large percentages of their research funded by the Department of Defense interests. For example, the Pentagon currently funds 75% of the country's computer science research. (Levidon and Robins, p 117) Clearly, the American military organization and civilian education system have long had a symbiotic relationship.

2. Reasons USMC Supports Graduate Education

Ultimately, the goal of any military application of education is to enhance the Nation's warfighting capability. The Marine Corps exists to fight and help the Nation win its wars. Even so, sending Marines to get postgraduate education doesn't always seem to fit the image of a warrior institution. Nothing could be farther from the truth. Performance can always be enhanced by knowledge. One academic professional says it

best: "As the tools of war become increasingly more complex, so too must the soldiers' interface with these tools become increasingly similar". (Chinni, p 63) This quote says in big words what the Marine Corps has used in its recruiting campaign for years: "To compete you must be strong. To win you must be smart." The Marine Corps cannot afford to be outpaced by technology. (Jernigan, 1997)

The Marine Corps, like its sister services, faces diminishing resources and is forced to make decisions on how to best use its training dollars. Consequently, care must be taken to ensure that investments yield the highest payoff. The significance of graduate education is realized in many respects. It provides a relatively inexpensive way to address the changing dynamics of modern warfare. Warrior-Scholars are equipped to make decisions in an increasingly chaotic world by learning to research issues in order to find solutions rather than rely on stock answers. Graduate education familiarizes officers with complex technical issues and prepares them to operate with confidence in potentially intimidating environments. Graduate education stimulates creativity and consequently fosters the innovation that is the hallmark of the American military.

The Marine Corps benefits in several ways by tasking some of its officers to study at the graduate level. First, it is important to realize that the Marine Corps doesn't spend time and money sending some of its best officers to graduate school for unselfish reasons. (Koons, p 37) There exist 400 billets throughout the Marine Corps and several joint establishments that require Marines with specialized graduate training. These include the procurement of new systems, instructors at military academies, and research into new weapon technologies, to name a few. The driving force to send Marines to get graduate

education is to fill these billets. An ancillary benefit is to raise the level of professionalism and technical competence in selected officers. (Reilly, p 41) The primary focus here is to prepare the officers to perform well in the specific billets listed above. One hidden benefit of graduate education is that it gives the individual Marine credibility in civilian circles, where advanced degrees are more common.

Another benefit of graduate education to the Marine Corps is the creation of a readily available pool of competent technicians and scientists that are already part of the military culture. These officers provide a critical link to civilian scientists and research staffs. (US House of Representatives, p 32) These "home grown" scientists have the technical background and the operational experience that each side values and, thus, can speak the language of both components. Equally important, are the officers' abilities to work on classified research and operate in combat environments without concern for new security clearances or salary disputes. These uniquely qualified officers are critical in keeping the proper focus of ultimate goals. General Sheehan, former Commander-in-Chief of United States Atlantic Command, says it well, " Fighting is done by warriors with technology in support, not the other way around". (Pexton, p 21)

The Marine Corps' selection and assignment of officers to receive graduate education has a strategic focus. U. S. Representative Glen Browder comments:

> In this changing defense climate - smaller budget, technological advances, and personnel reductions, the military has to do more and better with less. There are many ways to do this, and education is one of them. [Postgraduate education] is not simply trying to train students to fight today's wars, under today's situations. It provides preparation for future situations that may be different in ways we aren't even aware of. The students are expanding the strength and boundaries of our national defense. (Jones, 1997)

Captain Miller, Dean of Students at the Naval Postgraduate School, says it more succinctly, "We are making an investment in human capital". (Miller,1997) In this time of cut backs, the Marine Corps is alone among the Services in increasing the numbers of officers to the Naval Postgraduate School. (Anderson, 1997 and Miller,1997) The Marine Corps is investing in its future and its people by investing in graduate education.

In 1898, many technologies currently viewed as critical for successfully conducting war were at best not yet thought of or, at worst, labeled as impossible. aircraft, submarines, nuclear propulsion and weapons, guided precision munitions, and satellite communications are just a few example. Somebody had to think "out of the box" and research new ideas. Somebody had to find answers to hard questions. Others had to sell new ideas to people resistant to change. Graduate education provides the tools to move to the future. A hundred years in the future seems like a long time. However, the timeline shrinks considerably when one realizes that some of the current students at the Naval Postgraduate School will be the top Generals and Admirals thirty five years from now making decisions on which technologies to invest in. A new crop of scholars will follow their leaders and begin to develop new weapons and tactics to be implemented in the following thirty years. People, smart and well trained, are the best resource for the future as they can create the other resources. It has been said that America lost in Vietnam because the military relied too much on "smart bombs" and not enough on "smart people". (Levidon and Robins, p60)

In summary, the Marine Corps sends Marines to get graduate education to fill specific billets that come in eight vareities. These include: making policy, duty as an

instructor, enhancing Primary Military Occupational Specialty (PMOS), creating and managing new programs, researching new technologies, meeting demands for specific highly technical training, interacting with high level staffs, and working in a rapidly changing environment.

The Marine Corps has identified and validated several hundred billets that are required to be staffed by officers who possess postgraduate level education. Two programs, the Advanced Degree Program (ADP) and the Special Education Program (SEP), were established as a means of providing the Marine Corps with a sufficient number of officers to fill the billets. Upon graduation each officer is assigned a Military Occupational Specialty (MOS) code from 9600-9699 based on the academic discipline completed. Each MOS, in turn is assigned an MOS Specialist or Sponsor. The Sponsor is responsible for evaluating recommendation for new SEP billets, or additions and modifications to existing SEP billets and validation of each billet on a triennial basis. Additionally, Sponsors are required to provide a recommended priority billet assignment listing to facilitate the assignment of personnel to the most necessary billets.

The current process of reviewing billets that require SEP trained Marines is cumbersome and time intensive. Additionally, the process is entirely subjective and qualitative. Commands that stand to lose manpower staffing are given the responsibility of justifying their manpower requirements. Consequently, billet validation often does not get done in a timely or impartial manner. Some system that is better than the existing paper file to ascertain if a billet is valid is needed. (Weilsma, 1997) The authors plan to address the situation by examining Business Process Reengineering (BPR) to determine

where in the process Information Technology can provide a lever to move the boulders of inefficiency and ineffectiveness.

B. OBJECTIVE

The objective of the research is to develop a prototype which creates a virtual organization comprised of all SEP billet holders and Occupational Field Sponsors in order to simulate a conference in which stakeholders quantitatively examine validity of each billet without actual real time input and attendance. Each billet holder submits his recommendations, at his convenience before a given deadline, and the OCCFIELD Sponsor can manipulate the inputs at his convenience. Information can be moved easier, faster, and cheaper than can people. Distributed Collaboration is the first step towards a lean and agile enterprise position.

C. SCOPE AND METHODOLOGY

1. Scope

Initial research efforts identified seven processes within the Special Education Program (SEP). In the authors' opinion, the Billet Educational Evaluation Certification (BEEC) process is the most critical as it drives the activities of the other processes. This thesis will accomplish the following objectives:

a. A review of intranet technologies literature. (Chapter III)

b. A study of the benefits of assigning Marines to postgraduate education. (Chapter I)

c. An evaluation of the existing Special Education Program's activities. (Chapter II)

d. An in-depth review of Common Gateway Interface practices, dynamic HTML tools, and Open Database Connectivity techniques. (Chapter IV)

e. A transition plan to implement a "proof of concept" Decision Support System (DSS) prototype. (Chapter V)

Figure 1-1 diagrams levels of change increasing in a diagonal direction. Superficial change (i.e. just polishing current procedures) starts in the lower left corner while extensive change (i.e. restructuring organization leadership) culminates in the top right corner. The authors plan to recommend a change in the middle of the continuum for the manner of evaluating Special Education Billets.

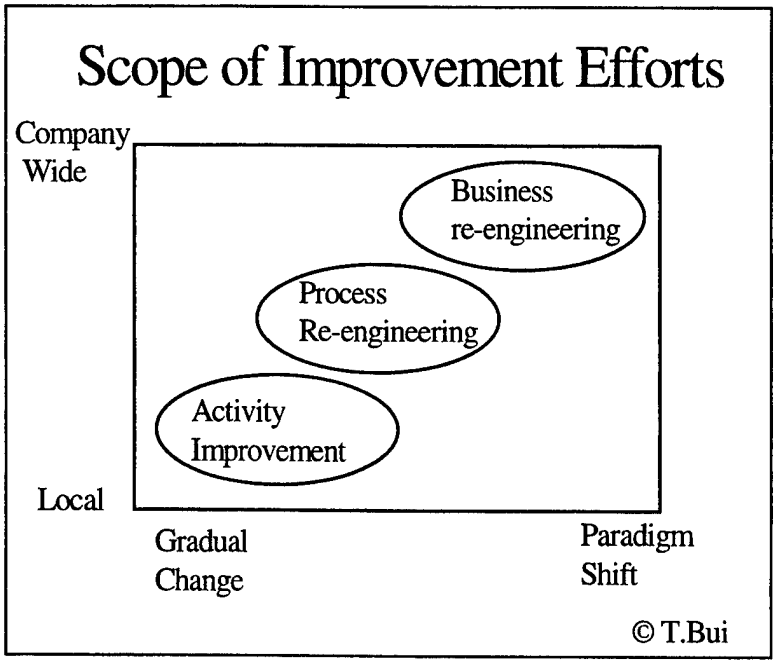


Figure 1-1

2. Methodology

The authors will follow a methodology learned from the field and implemented by the U.S. Army Corps of Engineers. The methodology is a three phased approach referred to as the USACE- Business Re-Engineering Process. (Bui,1996) The methodology entails: Examination of Business Strategies, Business Process Re-engineering and Evaluation. The first phase, Examination of Business Strategies, intends to answer the following questions:

What is the goal of the business?

How do we want to do business?

How do we judge how well we do business?

What will the activities of the business be?

What will we need to know to do business?

How can technology help do business? Which metrics (relative scale to measure) are involved.

What information technology will support our business?

The second phase, Business Process Re-Engineering, is comprised of nine activities and tasks:

-Defining the AS-IS existing system to provide a baseline for considering a new alternative.

-Examining each existing activity to determine whether it should be continued, eliminated or revised.

-Design alternative TO-BE system.

-Build a business case- a cost-benefit analysis- for each alternative design and select the most cost effective one.

-Develop a transition plan to implement the chosen design. (beyond the scope of this thesis)

-Develop a detailed functional design for the application.

-Acquire the application- preferably through a commercial off the shelf (COTS) product .

-Install a pilot implementation through an iterative prototyping process that entails testing and user reviews.

-Install the application where appropriate.

The timeframe required for phase three of the methodology, Evaluation of the implementation, extends beyond the authors' matriculation and thus, beyond the scope of this research.

II. BASELINE SYSTEM ASSESSMENT

A. EXAMINATION OF BUSINESS STRATEGIES

1. Goals of the Special Education Program

The Marine Corps has identified and validated several hundred billets that are required to be staffed by officers who possess postgraduate level education. (MCO 1500.47) Two programs, the Advanced Degree Program (ADP) and the Special Education Program (SEP), were established as a means of providing the Marine Corps with a sufficient number of officers to fill the billets. Approximately eighty percent of the officers receive their qualifications at the Naval Postgraduate School. The remaining officers obtain their qualifications at the Air Force Institute of Technology (AFIT) or various civilian academic institutions.

2. Requirements Determination

a. Interviews

According to one of the Marine Corps' Occupational Field Sponsors (OccField Sponsor) the Marine Corps does not formally set forth guidelines for measuring the performance of assigning officers to SEP:

> Unfortunately, there is no criteria that I have found to validate a billet. We rely on the command to articulate the requirements of the billet, then the Sponsor bounces that against what the school teaches to see if there is a fit. There is no real follow-up except for the triennial revalidation of

> the BEEC's [Billet Educational Evaluation Certificate], which usually is a regurgitation of an old BEEC by the individual commands (if they even have a copy of the old BEEC). So there you have it; no real criteria for validation. Validation can be accomplished by someone who is not a SEP graduate (such as myself), and we have no resources to follow-up adequately.
>
> (Boston, 1997)

Captain Ron Wielsma of the Total Force Structure Division agrees. In an interview with the authors, this manpower analyst stated that "a system is necessary to ascertain if a SEP billet is valid." (Wielsma, 1997) He described the current process of validating billets as simply a regurgitation of previous Billet Educational Evaluation Certificates (BEEC). The authors conclude that commands are complying with the Marine Corps Order which requires triennial billet validation without applying standard and formally accepted validation criteria.

b. Directly Observing Users

On a site visit to the Manpower Management and Reserve Affairs Section of Headquarters Marine Corps, the authors observed how managers of the SEP Program behaved in their work environment. This opportunity allowed the authors in a systems analysis role to supplement and corroborate information collected during the interview process. The work setting is characterized by frequent interruptions, numerous distractions and fragmented activities which all cause managers to focus on any one problem for only a short time. In the authors judgement, a billet validation system is an asset that enables the managers to focus their attention in this critical period.

c. Previous Research

Several students assigned to the Naval Postgraduate School developed a Target Architecture Heuristic for the Marine Corps Special Education Program. With respect to billet validation their research stated:

"In the BEEC submission process, there must be a solid review process to ensure that past submissions are not simply copied from the last submission. A system must be in place in the target system that is continually updated and shows when the last update to the billet requirement were made." (Gearhard et al, 1995) It is the authors belief that other SEP processes such as school selection, billet assignment and curriculum placement and review are all shaped by the number and validity of existing billets.

3. Performance Measures

Every process should be periodically examined to determine if it meets the needs of the problem that it is supposed to remedy. If the process is found to be lacking, one of the techniques to remedy it is Business Process Re-engineering (BPR). The main objective of BPR is to make processes effective, efficient, and flexible. (Bhatt, 1997) The effectiveness of a process is measured by examining the results to determine if they are what are desired and expected. Ideally, favorable results should be produced the first time and every time the system performs. The efficiency of a process is measured by examining the necessary resources to see if their use has been minimized (or optimized) by the BPR. The flexibility of a process is measured by querying the system's users and

"customers" to determine how well the system meets their requirements and how easily it can meet new demands.

The effectiveness of the current system of assigning officers to the Special Education Program can be seen in how well it places qualified officers into pertinent billets. The efficiency of the system is measured in terms of the time required to validate the billets. The flexibility of the system is the time, in man-hours and actual time, that it takes to determine which officers should be placed in what billets.

The ability to meet the objectives of effectiveness, efficiency, and flexibility depends upon the following criteria:

-Does the process add any value in the final outcome?

-Can the processing time be reduced?

-Can the activities be performed concurrently instead of sequentially?
(Bhatt, 1997)

In the case of the Special Education Program assignment process, specifically the Billet Validation Process, the authors' answer to the above questions is unequivocally yes.

Performance Measures answer the question: How does one judge how well the business is performed? (Bui, 1996). Performance must be measured in methods that make sense.

The Marine Corps Order on Manpower Requirements Management Procedures (MCO 5311.1B) states that the "...Personnel Requirements Criteria Manual (PRCM) must be used as a guide for determining personnel requirements". (MCO 5311.1B, 1994)

The problem is that the PRCM only covers 34 functional areas and leaves vast portions of functional areas not covered by a formally published position criteria. Currently, if a command needs a more in-depth analysis of a functional area or must develop manpower requirements for a functional area not covered by the PRCM they contact MPC-40 for information on the methodology that can be used. In practice, commands that need to develop SEP billet manpower requirements do not contact MPC for a methodology to use but give their "best guess" as to what should be used. (Boston,1997) However, it is just that: a guess.

The constraints that the MPC operates under include:

- modifications that increase billet totals require the identification of compensatory reductions.
- current capability to react to constant and widely fluctuating changes is limited.
- variations to recruiting, training and promotion plans cannot be accommodated in a timely manner.
- each successive reviewing echelon must reexamine the current staffing throughout the scope of its authority to ensure that all requirements are met.

(MCO5311.5A, 1994)

The authors have applied the performance measures to the data collected in the requirements determination phase and conclude that the billet validation process is inefficient and suitable for re-engineering. The inability to identify compensatory reductions marks a lack of effectiveness. The difficulty in responding to training, recruiting, and promotion variables demonstrates the system's lack of flexibility.

4. How Technology Can Help Do Business

Several technical advances exist that may be applied to correct some of the deficiencies of the current system. The use of information networks to access relevant information from databases is of enormous importance in eliminating duplicate activities, preventing errors from occurring, reducing cycle time in product development, and improving responsiveness to customer needs. (Bhatt, 1997)

Distributed, client-server systems, and distributed object technologies offer a number of potential benefits, as well. These include:

- the ability to perform application processing in the most appropriate place, whether on the desktop or in a shared server environment.
- the ease of expanding a system by adding new processing capabilities.
- the improved system enhancement potential (new technologies can be added to the network and services redistributed).
- resource sharing between users.
- access to users for desktop personal productivity tools.
- built-in redundancy and no single point of failure.
- the ability to execute applications faster and more efficiently by using distributed resources in parallel.
- the protection of data as only the data resides on the central system (everything else - user interface and logic - resides on desktop devices, accessing the data via SQL calls). (Brooke, 1997)

From the list of distributed technologies, the authors believe the most critical to the SEP process are the ability to work in a shared environment, resource sharing, and data protection.

There exist several specific ways that the application of technology may aid the SEP process. One is that Billet Education Evaluation Certificates (BEEC) could be stored and processed on-line via a web browser and into a relational database. Another suggestion is that the justification portion of the BEEC could be made more quantitative. This subjective process could be made more objective by establishing a scale of measure in which to rate billet submissions for change, add or delete requirements. A third practical suggestion is to modify the successive echelon review to a parallel (vice a serial) flow of information. Currently, information flows up the hierarchical chain of command. The new system would allow distributed collaboration (i.e., each command could review the billet requirements and add their justification as to why a specific billet is needed).

It is important to remember that technology is the tool, not the solution. The solution lies in re-engineering the old way of doing business to eliminate inefficiencies. The prime benefit that information technology brings to the solution is that it is a powerful tool for reducing the "costs of coordination". (Davenport and Short, 1990) Davenport and Short explain that coordination has two components: Mediation and Collaboration. The degree of mediation is sequential flow of input and output among participating functions. The degree of collaboration is the extent of information exchange and mutual adjustment among functions when participating in the same process. In their framework, information technology is instrumental in reducing the degrees of mediation

and enhancing the degrees of collaboration. A better coordinated organization is capable of responding quicker and more efficiently than its competitors and may realize potential strategic advantages. (Davenport and Short, 1990)

B. "AS-IS" SYSTEM PROCESS MODELING

1. Decomposition Diagram

The process for selecting, training, and assigning an officer to a billet that requires graduate education is long and complicated. The main elements are Application, Selection, Curriculum Assignment, Thesis Selection, Follow-On Assignment, Billet Evaluation, and Curriculum Review. A brief description of each process follows.

Application Process - The system is initiated when a Marine officer desires to pursue a postgraduate degree, submits an application to the Special Education Program (SEP) department of MMOA-3. The application package includes transcript, recommendations, and curricula preferences.

SEP Selection Process - All applicants are evaluated for professional eligibility by a selection board at Headquarters, United States Marine Corps (HQMC) and for academic eligibility in their listed preferred curricula by the Naval Postgraduate School (NPS) Admissions Office. Career Counselors at HQMC review the applicants' records for career implications of attending NPS. The selection board then selects the most qualified applicants to fill the needed SEP billets. An interesting note is that the Marine Corps selects the students based on their overall performance and scholastic aptitude and then

assigns them to specific curricula, rather than to screen for specific academic disciplines. (Andy,1997)

Curriculum Selection and Assignment Process - Applicants' preferences are weighed against the needs of the Marine Corps to determine potential courses of study. Officers are assigned a course of study based on staffing goal needs and personal preferences after they are determined to be eligible and selected to attend school.

Thesis Selection Process - Students canvas Marine units and professors to determine a research topic that may or may not be relevant to their follow-on assignments.

Follow-On Assignment Process - An Officer is assigned to a pay back billet in his field of study after completing NPS. This assignment is determined by examining Staffing Goals, Authorized Strength Reports, and vacancies in Major Component Commands (MCC).

Billet Evaluation Process - Occupational Field Sponsors (OccField Sponsors) act as liaison between commands requesting SEP billets and those responsible for approving the requests. Existing billets are re-evaluated every three years by T/O Sponsors, MOS Sponsors, and the office of the Commandant of the Marine Corps (CMC). (MCO 1520.9F)

Curriculum Review Process - Every two years MMOA, OccField Sponsors, Academic Associates, students, and HQMC review curriculum content to ensure educational skills are meeting billet requirements. (MCO 1520.9F)

The authors have determined that the Billet Evaluation Process is the heart of the SEP Assignment System. The whole reason the SEP program exists is to fill specific billets; it is for this reason that the authors choose to re-engineer the Billet Evaluation Process. A complete Decomposition Diagram can be seen in APPENDIX A.

2. Context Diagram

The elements of the above system can be broken down in detail. A macro examination reveals several entities that provide inputs to the Special Education Program (SEP). The Naval Postgraduate School provides the education, Headquarters, Marine Corps (HQMC) provides policy and guidance, and Officers matriculate. The outputs of the SEP process are SEP billets at Monitored Command Codes (MCC). MCC's provide feedback elements in the form of educational skills requirements and billet evaluations.

A detailed examination reveals the depth of the complicated process. An applicant submits a package containing his academic and professional credentials to the SEP Selection Board. HQMC provides guidance as to the billets required in the coming years. The packages are screened to eliminate the ones that do not meet the minimum published standards. The screened application packages are forwarded to the NPS where they are evaluated to determine the candidate's Academic Profile Code (APC). The APC (used to show what fields an applicant is qualified to study) is passed back to the selection board. MCC's indicate how many billets are required and the Selection Board takes all this information and selects the required number of most qualified applicants. The selected officers are assigned a curriculum of study and ordered to NPS. The

students then select (and complete) a thesis, complete education requirements, matriculate, and are ordered to a follow-on assignment. The billets are periodically evaluated and change requests are submitted to HQMC for new or changed SEP billet requirements. The last element of the cycle is for NPS, HQMC, and billet holders to evaluate NPS curricula and make changes to ensure SEP Marines are equipped to meet the needs of the Marine Corps. The whole process then repeats.

A diagram can be seen in APPENDIX A.

3. Level 0 Diagram - Billet Evaluation

The Billet Evaluation Process has three separate actions: add, modify, or delete a billet. Adding a billet starts by a command identifying SEP requirements and completing a Billet Educational Evaluation Certificate (BEEC) to list requirements for the new job. The command desiring the new billet recommends the grade and MOS to fill the billet and justifies the BEEC. The BEEC is then forwarded to the MOS Sponsor who is responsible for that particular SEP MOS. The MOS Sponsor evaluates, approves, and forwards the BEEC to Manpower Control (MPC). MPC assigns a BEEC control number, modifies the Table of Organization (T/O), and creates the new billet.

Modifying a billet is a similar, but less complicated, process. An MCC creates a modification request BEEC and forwards it to the MOS Sponsor for review. The MOS Sponsor evaluates, approves, and forwards the modification to MPC. MPC logs the changes in the list of approved SEP billets that it maintains and the billet is modified.

Deleting a billet is even easier: MPC, MCC, or MOS Sponsor recommends deletion. MOS Sponsor determines if the billet should be deleted and recommends to MPC to remove it from the T/O. A complete set of diagrams can be seen in APPENDIX A.

C. BUSINESS PROCESS RE-ENGINEERING

1. Improving Business Processes

As illustrated above, the Special Education Program assignment process is a suitable candidate for re-engineering. The Marine Corps supports graduate education because it prepares officers for future assignments in eight distinct areas. These include billets as educators or members of research teams, positions of program management and policy development, enhancing primary MOS skills and developing current technical skills, and preparing officers to operate effectively in Joint and other complex work environments.

When tackling a project of this scale, it is important to select manageable elements of the problem and establish a solution to each part methodically. Several questions need to be answered in order to determine where the focus of main effort should be. Several of these questions are:

-Which processes should be added?

-Which processes should be deleted?

-Which processes should be modified?

-How can value be added?

-How can processing time be reduced?

One scholar argues that the heart of reengineering is the notion of "'discontinuous thinking' – recognizing and breaking away from the outdated rules and fundamental assumptions underlying operations... rules of work design are based on assumptions about technology, people, and organizational goals that no longer hold." (Malhotra, 1996)

He suggests the following "principles of reengineering":

-Organize around outcomes, not tasks.

-Have those people who use the output of the process perform the process.

-Comprise information processing work into the real work that produces the information.

-Treat geographically dispersed resources as though they were centralized.

-Link parallel activities instead of integrating their results.

-Place the decision point where the work is performed by building controls into the process.

-Capture information once at the source.

(Malhotra, 1996)

Careful consideration of the above questions and salient points leads the authors to conclude that the key element of the SEP assignment program is the Billet Evaluation Phase. This phase can provide increased value from modification, can be made into

parallel processes, and represents the decision point where the actual work is performed. In short, it is the very heart of the entire process.

III. ALTERNATIVE "TO-BE" SYSTEM DESIGN PRINCIPLES

A. SPECIAL EDUCATION PROGRAM DECISION ENVIRONMENT

1. Factors That Influence Decision Environment

Decisions are not made as free standing entities but rather as an interaction of many factors. These factors form the environment in which decisions are made. Some factors are common to all types of decisions while others are specific to unique decisions. The common factors that comprise the decision environment are: type stimuli, required degree of coordination, nature of task, level and impact of decision, amount of uncertainty and risk, and decision making philosophy and objectives. (Davis, 1988) The type of stimuli can best be described as those circumstances that occur to force a decision to be made; an opportunity, a problem, or a crisis are examples. The required degree of coordination is a measure of how many entities are involved in the problem solving process. An individual requires less coordination than a committee does. The nature of the task establishes whether the problem is structured, semi-structured, or unstructured. The level and impact of decisions vary; tactical decisions are made on a relatively small scale and have few affects while strategic decisions have far reaching impacts. The factor of uncertainty and risk addresses the scale of potential results of making a decision. Decision policy and objectives are measures of the driving forces behind the issue needing to be resolved.

Other factors can be bunched into common groups. Operational factors include physical constraints and resource limitations. Policies, issues, and goals are examples of organizational factors. External factors are typified by legal regulations and financial constraints. Informational factors address the reliability and availability of data. Management objectives provide the motivation behind the decision problem. (Bhargava, 1996).

The SEP Billet Validation process is composed of a series of problems to be resolved. Factors affecting decisions include determining the relative value of billets, comparing billets, and determinations as to which should be added to, retained on, or deleted from the Marine Corps' Table of Organization. The stakeholders are the individual billet holder, his boss, the OccField Specialist, and the SEP Assignment Officer. In this prototype, the authors provide structure to assist in making unstructured decisions. The most significant constraint on the SEP Billet Validation is the fact that their is a finite number of SEP Billets in the Marine Corps that must remain balanced; if a billet needs to be added, one needs to be balanced elsewhere. Resource limitations come in the form of relatively small number of SEP graduates being assigned to a larger pool of billets requiring graduate education.

2. Decision Making Strategies

Scholars have determined that people make decisions using six different strategies. (Bhargava, 1996) Optimizing decisions look to find the highest payoff (or maximum value). Satificing decisions meet minimum standards and settle for "good

enough". Quasi-satisficing decisions find the best available solution without examining all the alternatives. Sole decision relies on the opinion of a single "expert". Selection by Elimination decisions are made by eliminating unsuitable alternatives leaving a narrow field of options. Incrementalism is a process of making decisions "a little at a time", constantly creeping towards the optimal solution. Each strategy has its own balance of time required to make a decision and the quality of a decision. Some decisions can be made quickly because their consequences are small while decisions with greater consequences require greater attention. The optimization strategy is the top end of the scale as it results in the best solution (but takes the most time). The other strategies sacrifice differing amounts of "decision quality" for shorter amounts of time.

The current process of evaluating SEP billets is a combination of Sole Decision, Quasi-Satisficing, and Incrementalism. Typically, one person (overwhelmed by the amount of variables involved) throws up his/her hands in frustration and makes a decision and hopes to improve it in future examinations (Boston, 1997). Obviously, this is not effective decision making. The "To-Be" state envisioned by the authors of this thesis repositions the process on the scale of strategies towards an optimization strategy.

B. DECISION SUPPORT

1. Implications for Decision Support

Decision support is the process of gathering, sorting, and prioritizing data into a fashion that can be evaluated and developed into options. (Andriole, 1989) The decision

maker must match the information processing requirements with the level and consequences of the decision and weigh decision strategies to make the best decision in an appropriate amount of time. A simple decision with few alternatives can be determined by an individual quickly but more complicated decisions require closer examinations and some degree of computational power. For example, an individual can easily decide to eat at McDonald's or Burger King based on personal preference. This simple decision has only two alternatives and relatively low consequences (the decision maker eats a similar lunch either way) and can be made quickly. However, if an individual is investigating in which restaurant to invest $ 100,000, the decision would be made much more carefully after a careful study of hundreds of variables. This decision takes a longer time to process because both the complexity and the consequences are higher. More complicated decisions are the best candidates for Decision Support System assistance.

2. Value of a Decision Support System

Decision Support Systems exist to improve the effectiveness of the using organization (Herrick, p13) DSS's have the obvious value of determining solutions to complicated problems but they also can be used to provide insight into the factors that surround the decision. (Tettlebach, p 13) DSS's increase the bounds of rationality; they provide analytical ability far above the level of a human decision maker. In the example of restaurants seen above, a person would not be able to examine 2000 different franchises and select the best one in which to invest. The person would be overwhelmed

by the possible permeations and combinations of hundreds of interacting variables and would become frustrated. The decision would then either be made by default random selection or made with incomplete data. A DSS could recommend the best solution because it can weigh the myriad of alternatives in a matter of minutes. In fact, many complicated decisions can only be made with computer assistance because of the high volume of data and short time requirement to arrive at the solution. (McQuay, p2)

DSS's provide structure to unstructured problems. Scholar James O'Brian lists six areas that DSS's assist users by creating structure from chaos. DSS's help to identify possible alternatives, determine what criteria makes SEP Billets different from others, link information by similarities (criteria for 96XX billets), create decision alternatives, evaluate outcome scenarios, and compare alternatives to select the best option. (O'Brian, 1993) The authors' have determined that there are four primary stakeholders in the SEP Billet Evaluation System. These are: the individual 96XX billet holders who are tasked to review their own billets, the 96XX billet holders' Commanding Officers or Officers-in Charge who review their subordinates' billets, the Occupational Field Sponsors who manage the SEP billets, and the Total Force Structure Division (TFSDIV) who add or delete the billets to the Marine Corps' Table of Organization. The value a DSS gives to the SEP Billet validation process is that it supports cooperative work and group discourse by structuring the argumentation and provides a semi-formal documentation of the process used to arrive at a decision. (Bhargava, et al, 1994)

3. Decision Support System

A Decision Support System can be defined as a computer system that supports human decision making by means of models and data. (Bhargava, p17) DSS's exist not to replace human decision makers but to enhance their effectiveness. DSS's can be used to weigh more alternatives than can easily be examined, leading decision makers to making more informed (and hopefully) better decisions. The "more informed" decision that the SEP Billet Validation System makes are which billets to keep and which billets to staff. Michael Davis writes that the "role of decision support is to provide an effective mechanism for condensing the complications of the world in such a manner that a manager can exercise his corporate insight". (Davis, p28) In short, DSS's allow a decision maker to use his time effectively; the system condenses the variables and presents them for a decision in an organized fashion.

4. DSS Components

A DSS is composed of three parts. These parts are the Database Management Software (DBMS), the Model Base Management Software (MMS), and the User Interface Management Software (UIMS). (Sprague,1980) The DBMS organizes data and extracts the specific fields and records when queried. The MMS provides the heart of the functionality to a DSS as it manipulates the model to derive solution sets. The UIMS is the link from the other two components to the user; the user is able to read and manipulate data through the UIMS. An analogy to a microwave may provide

clarification. The DBMS is like the revolving tray that positions the food (it positions the data to be examined), the MMS is like the irradiator element (it does the actual work), and the UIMS is analogous to the window in front (it allows you to see what is happening).

5. Rapid Prototyping Approach vs. Traditional Approach

There exist two methods of developing DSS's. The traditional approach advocates a repetitive cycle of analysis, design, construction, and implementation. (Sprague, 1980) This cycle is repeated until a system is developed that meets the user requirements. This process is often time consuming and costly. The alternative method to develop a DSS is the rapid prototype approach. This method involves a quick analysis of several factors (TELOS - Technical feasibility, Economic feasibility, Legal ramifications, Operational requirements, and Project schedule) and the construction of a prototype that can be tweaked, focused, and modified as the user requires. (Bhargava, 1996) It is the authors' opinion that the TELOS method of rapid prototyping is less expensive and more effective than the iterative cycle method of DSS construction. It is for this reason that the authors' chose to use the second method in the development of the DSS for the SEP Program.

C. DECISION MAKING MODELS

1. Role of Models in DSS

Models are used to scale a problem into manageable components. Models simulate the process of human decision making. Walsh and Ceatham define a process model as "[a description] of the flow of data through a system and the processing performed on that data". (Walsh and Ceatham, p21) Models must be specific. They must be constructed to provide a complete and accurate representation of the particular issues of the problem being addressed.

As discussed in Chapter I, the authors have developed and categorized the criteria requiring the Marine Corps to send officers to graduate school. The eight reasons are outlined below.

a. New Programs

SEP Marines may be tasked with the acquisition, development, and fielding of new technical programs to address the changing dynamics of modern warfare. (Example: A Marine Program Manager tasked to acquire a new airframe.)

b. Research

SEP Marines are often required to interact with technical research agencies and laboratories and assigned to find solutions to large scale problems requiring extensive research. (Example: a SEP Marine assigned develop a new close combat simulator)

c. Technical Requirements

SEP education provides technical skills and knowledge in the technical domain required for specific billets. (Example: A SEP Marine sent to Test Pilot School as an Aeronautical Engineer)

d. Interaction With Congress, Joint Staff, or Other High Level of Staff

SEP prepares Marines to operate with confidence in unfamiliar and potentially intimidating environments. (Example: A SEP Marine with a degree in Arabic Culture may be assigned as an advisor to a unified Commander-in-Chief's staff as an intelligence analyst)

e. Make Policy

Graduate education equips Marines to make decisions at high levels and some will be tasked to develop new policy and initiatives. (Example: SEP Marines may be tasked with implementing DOD manpower mandates)

f. Education

Some SEP billets require a graduate degree to become an instructor at military academies and other institutions. (Example: a Marine assigned to the Naval Academy as a Physics instructor)

g. Enhanced Performance In PMOS

Some SEP Marines are sent to graduate school to gain further knowledge in their Primary MOS. (Example: A Comptroller may be sent to get a degree in Financial Management)

h. Work in Rapidly Changing Environment

Postgraduate education provides Marines flexibility to operate in a dynamic world and gives credibility in some circles. (Example: SEP Marines may be assigned to interact with contractors, professors, and other subject matter experts)

2. Categories of Models

Models are classified as either descriptive or optimizing and function at the tactical, operational, or strategic level. (Bhargava, p34). Descriptive models explain how a system works while optimizing models suggest the best configuration for the system. Tactical models focus on short time periods and a narrow scope of changes. Operational models focus on longer time periods and a larger scale decision. Strategic models manipulate longer periods of time and resolve issues with far reaching consequences. The model used in the SEP Billet Evaluation prototype is an Optimization model affecting the Operational level. The Optimization aspect was discussed above (please see paragraph A2). This model is classified as Operational because it focuses on changes to be made two years into the future. However, it also can be used at the tactical level as it can be used to determine which Marine is best qualified for a specific job. It also has a

strategic component as it can be used by the Manpower department of TFSDIV to determine which billets are the best candidates for elimination, influencing the structure of the entire organization.

3. Multi-Criteria Decision Making and Utility Theory

The model used by the authors in constructing the SEP Billet Evaluation System implements utility theory to solicit a ranking of alternatives from the user. Utility theory is used to assign a value to each variable based on individual preferences. (Lapin, p1053) These variables are then ranked against each other to determine which are more important. Multi-Criteria Decision Making (MCDM) is used to obtain a scale of measure for each criteria, determines a weight, and evaluates weighted alternatives. (Bhargava, 1996)

4. MMS Functionality

The utility function is the heart of the Model Management System (MMS). The authors used Multi-Objective Optimization to maximize all criteria, reduce goals and constraints, determine the utility function for each alternative, and determine the total utility by summing the utility of all the components. The utility function that the authors created (which represents the SEP billet optimization strategy) is as seen in Figure 3-1 on the following page.

Utility Model

$U_{i,m}$: Utility of each billet to a 9600 MOS

$$U_{i,m} = \sum W_{m,c} * S_{i,m,c}$$

where:
i: individual billet
m: 96XX MOS
c: criteria $_{[n=1..8]}$
$S_{i,m,c}$: Scale Weight of billet$_i$ in MOS$_m$ on criteria$_n$
$W_{m,c}$: Weight of criteria$_c$ for MOS$_m$

Figure 3-1

This says "the utility of each billet to a 96XX MOS is equal to the sum of the products of the weight of the criteria and the weight of the intensity of the criteria within an MOS. Multiple Attribute Utility Theory (MAUT) explains that the total worth of all the variables is determined by combining the individual utilities for each criterion. The authors used Expert Choice™ by Expert Choice Incorporated to manipulate the variables. This topic is discussed in depth in Chapter IV.and Appendix E.

D. DATABASE MANAGEMENT SYSTEM

The authors used Access™ by Microsoft as the Database Management System (DBMS).

E. USER INTERFACE SYSTEM

The User Interface System implements static and dynamic HTML using ColdFusion™ by Allaire Incorporated and NetObjects Fusion™ by Net Objects Incorporated. The SEP Billet Evaluation Prototype can be viewed using a Java-capable browser at http://dnet8.sm.nps.navy.mil.

IV. SPECIAL EDUCATION PROGRAM DSS DESIGN

A. BILLET VALIDATION DSS ARCHITECTURE

1. Web based DSS Architecture

A standard DSS expands the users' bounds of rationality, and a Web based DSS extends the value of the system to geographically remote users. Just as Metcalfe's law states that the value of the network is proportional to the square of the number of nodes, the value of a DSS becomes exponentially more valuable to the users when information is shared over the Internet.

The cost of the increase in value of information of a Web based DSS is an increase in the complexity of its architecture. In contrast to a standard DSS, communications between the UIMS, MMS and DBMS in Web-based DSS must flow back and forth over the Internet in a client/server architecture. Figure 4-1 illustrates the path that a client request and server response follows over the Internet. Instead of direct communication between functional components, a Web-based DSS utilizes a set of agents to negotiate transactions and communications between components. (Tettelbach p.26)

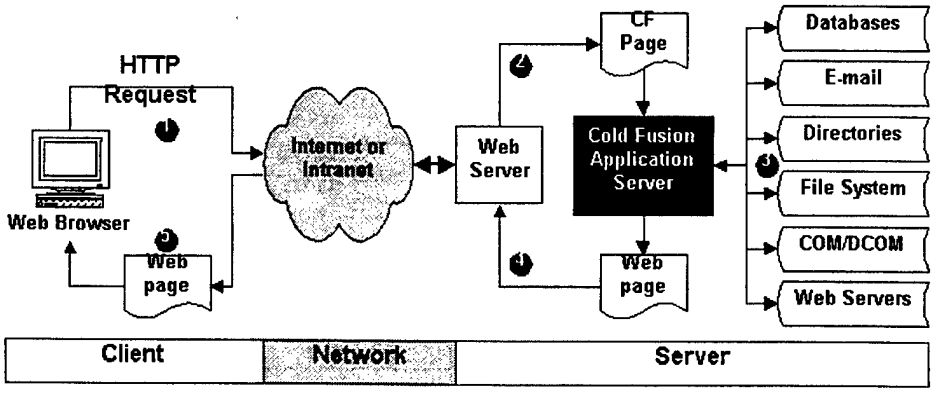


Figure 4-1 (Allaire, 1997)

Some professional journals refer to the process of linking databases to a web browser as "repurposing"; meaning to link a client server application to the Web and making it universally accessible. (O'Donnell, 1996) Middleware works to shield browser applications from the details of the proprietary or lower-level applications (Bornschein et al, 1997). Middleware or functional agents are implemented using various technologies and operate at the interfaces between the DSS components. The SEP Billet Validation prototype uses various middleware technologies to repurpose the DSS components.

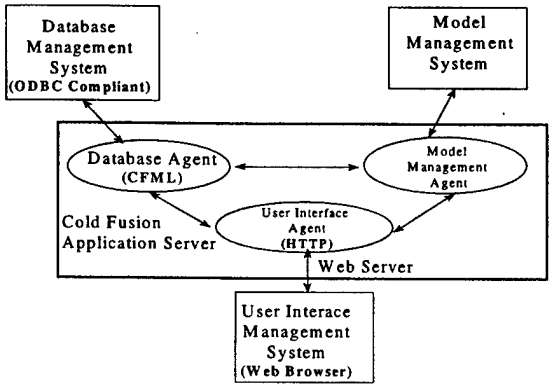


Figure 4-2 (Tettelbach, 1997)

2. Web Browser Technology

a. Hypertext Markup Language

HTML is a markup language which allows users to specify links to documents on the Internet. These link specifications are then interpreted by a Web browser. The prototype implements the UIMS through hypertext and hypermedia transport via hypertext transport protocol (HTTP) which enables users to access the DSS as universal clients.

b. JavaScript

An object scripting language for controlling the client-side display of pages in the Web browser. Cold Fusion graphlets are a set of graphing applets which use the Allaire Database Component Framework (DCF), built with Sun's Java (TM) programming environment. These graphlets add a dynamic graphing function to the UIMS.

3. Server Technology

a. Web Server

The web browser sends the HTTP request to the Web server which in turn, passes the HTTP request to the Cold Fusion Application Server. Once the request is

processed by the Application Server a response is sent to the Web server where it will be forwarded to the client's Web browser.

b. Server-side Markup Language

Pages in a Cold Fusion application contain the server-side Cold Fusion markup language (CFML) in addition to HTML. Based on the CFML tags the Cold Fusion Application Server executes the specified command, interacts with the server and dynamically generates an HTML page.

c. Cold Fusion Application Server

The Cold Fusion Application Server integrates the Web server with the ODBC database. Instead of using the Common Gateway Interface (CGI) as a standard protocol for extending the functionality of Web servers, the Cold Fusion Application Server runs as a multi-threaded system service and handles all of the dynamic processing. The Application Server communicates with the Web server either through a very small CGI executable referred to as the stub (CFML.EXE) or through a native Web server API. Instead of launching a CGI executable, servers supporting an API communicate directly with the Cold Fusion application server through a DLL.

4. Database Technology

a. Open Database Connectivity

ODBC is a relational database standard developed by Microsoft Corp. which ensures a uniform interface for a variety of database systems to facilitate communications with application servers. ODBC is implemented through drivers which act as a layer between applications and databases. ODBC drivers translate SQL into appropriate operations for the database.

b. Standard Query Language

SQL forms the basis of all relational data-base operations, regardless of the language or tool being used to develop database applications. SQL is used as a simple access and retrieval method, it can also employed as a programming tool to perform mathematical computations.

B. MODEL MANAGEMENT SYSTEM DEVELOPMENT

The model management system was developed using "a multi-attribute decision support software tool based on the analytic hierarchy process (AHP): Expert Choice Pro version 9.0 for Windows." (Fernandez, 1996) Although AHP is a subjective procedure and the current method of billet validation is also subjective, AHP adds a finer level of granularity to the problem confronting the decision maker.

1. Functional Hierarchy Design

The billet validation model uses a three level functional AHP hierarchy (Figure 4-3). The hierarchy was constructed using a top-down approach in which the objective was defined first and the criteria were defined later. The broad overall objective resides at the highest level or level zero of the hierarchy. The objective or goal is to validate a Special Education Billet.

Lower levels of the hierarchy correspond to criteria that are used to choose between alternatives. Level One or the level immediately below the goal is the criteria used to evaluate a SEP billet. It consists of eight nodes or criteria (Figure 4-4). At the lowest level of many AHP hierarchies are the alternatives to be evaluated. When a large number of alternatives are to be evaluated, the process of comparing all elements to each other, i.e. relative measurement, becomes unwieldy.

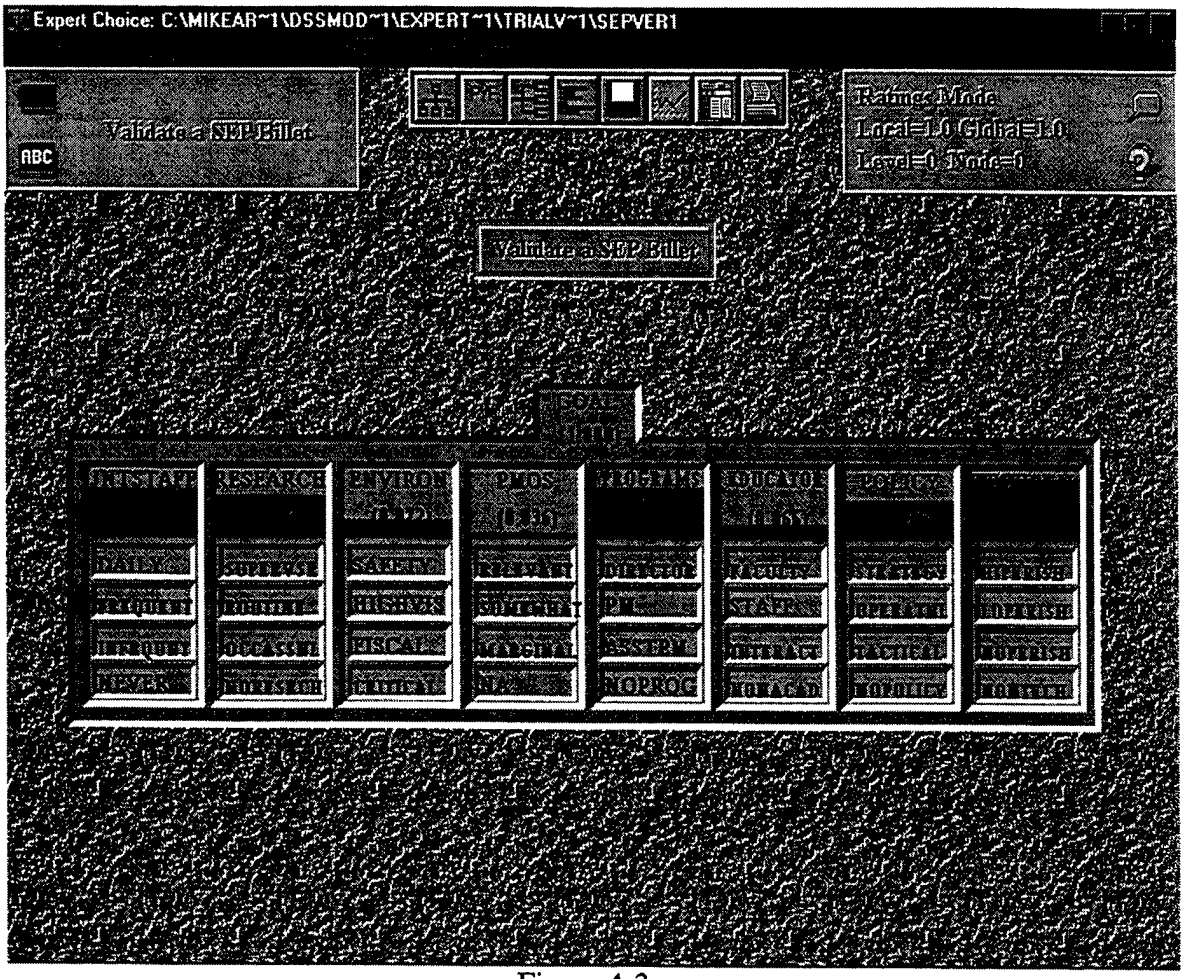

Expert Choice: C:\MIKEAR~1\DSSMOD~1\EXPERT~1\TRIALV~1\SEPVER1
Validate a SEP Billet
ABC
Ratings Mode
Local=1.0 Global=1.0
Level=0 Node=0
Validate a SEP Billet

Figure 4-3

Validate a SEP Billet

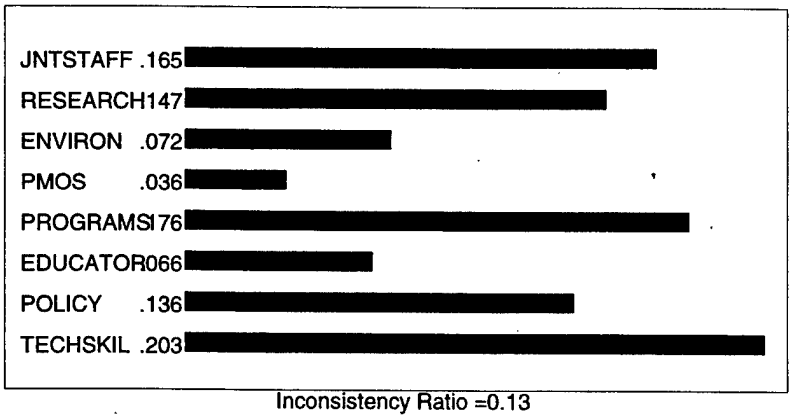
Node: 0

Compare the relative IMPORTANCE with respect to: GOAL

	RESEARCH	ENVIRON	PMOS	PROGRAMS	EDUCATOR	POLICY	TECHSKIL
JNTSTAFF	1.1	2.0	5.0	1.0	5.0	2.0	(2.0)
RESEARCH		2.0	5.0	1.0	6.0	1.0	(5.0)
ENVIRON			2.0	(5.0)	2.0	1.0	(3.0)
PMOS				(5.0)	1.0	(5.0)	(3.0)
PROGRAMS					1.0	1.0	2.0
EDUCATOR						1.0	(2.0)
POLICY							2.0

Row element is __ times more than column element unless enclosed in ()

Abbreviation	Definition
Goal	Validate a SEP Billet
JNTSTAFF	interaction with allied, joint, congressional or high level staff
RESEARCH	interaction with technical research laboratories
ENVIRON	work in a rapidly changing environment
PMOS	relevant to primary military occupation field
PROGRAMS	development and fielding of new and technical programs
EDUCATOR	instructor in academic institution requiring adv degree
POLICY	think tank
development of new policies and initiatives	
TECHSKIL	frequent use of technical skills & knowledge in technical domain



Inconsistency Ratio =0.13

Trial Use Only

Figure 4-4

2. Ratings Using an Absolute Measurement

Absolute measurement, in contrast to relative measurement, was used in developing the billet validation model. This mode assesses alternatives against an established scale for each criteria rather than against one another. The number of comparisons is a function of the number of criteria and not a function of the number of alternatives. This process reduces the volume of comparisons and allows manpower analysts to evaluate hundreds of billets.

3. Scale of Intensities

The ratings method of decision modeling must ensure that all alternatives are compared against the same standards. These standards are referred to in the Expert Choice Pro ™ software as ratings intensities. Ratings intensities were established for each of the Level One criteria and appear as nodes under the criterion to which they apply.

4. Hierarchy Evaluation using Pairwise Comparison

The object of the Analytic Hierarchy Process is to derive weights called priorities for each factor in the problem then synthesize the weights to rank the alternatives . To assign weights directly to each criterion is exceedingly difficult. Pairwise comparisons are easy to obtain and accurate, and allow one to focus separately on each criteria relevant to the decision criteria weights. (Bhargava, 1996) In the prototype development, Expert

Choice Pro ™ was used to conduct the pairwise comparison of criteria and intensities. First, the eight criteria were compared using the software to help structure the problem by prompting the authors for their judgments as to the relative importance, likelihood or preference of each criteria.

Upon completing the comparison of criteria, the intensities were compared to calculate the priorities for each group which collectively became a customized scale. This scale ensures a consistent measure for evaluating each alternative or billet with respect to the overall decision goal. See Appendix E for criteria and intensity definitions and weights.

C. SEP BILLET VALIDATION DATABASE MANAGEMENT SYSTEM

1. Entities and Relationships

The entities are objects about which the prototype maintains information. The entities involved in the development of the database schema are:

- **Billet:** a specific job title in a Marine Corps organization

- **Billet Holder:** the officer assigned to a specific job title within a Marine Corps organization.

- **Criteria Weight:** the AHP determined weights for each of the criteria

- **Intensity Scale:** the customized scale and weighted value for each

Although the Criteria Weight and Intensity Scales are attributes which describe a billet, they are also entities in themselves since they contain data. For example, the entity

Criteria Weight has eight attributes and eight corresponding values for those attributes. Likewise, the Intensity Scale entity has four attributes and four values. The Entity-Relationship (ER) Diagram is depicted in Appendix D.

2. Tables

A complete listing of the tables and attributes is in Appendix D. The tables are logical by-products of the E-R Diagram. For each entity there exists one or more tables. To facilitate updating and managing data entries, the Intensity Scale entity was broken down into eight separate tables; one table or customized scale of weights corresponding to each of the eight attributes in the Criteria table.

3. Identification and Authentication Table

Although it did not appear in the E-R Diagram, an additional table, called Users was added to the database for purposes of authenticating user login. The values in the attributes username and password are compared to the login name and password entered by the user. If both user entered values match those in the User table, access to the prototype is granted.

4. Referential Integrity

Only one referential integrity rule exists in the SEP Billet Validation database. The referential integrity rule states that the database must not contain any unmatched foreign key values. (Earley p. 19) In transforming the E-R diagram into the database

schema, the key of the Billet Holder table, as the parent of the one-many relationship, was inserted as a foreign key in the SEP Billet table. This accounts for instances when one billet holder may be performing duties in several billets. The ramification of enforcing referential integrity in this relationship is as follows: a billet can not be added unless a billet holder exists and a billet holder can not be deleted unless the corresponding billet is deleted. Although billets can exist on organizational structure charts without a billet holder, the prototype is designed for billet holders to evaluate billets they occupy. Likewise, these billets are of concern to the manpower analyst since they draw from the pool of available officers. In this context, the enforcement of the referential integrity rule is logical.

D. SEP BILLET VALIDATION USER INTERFACE

1. Web Browser Interface

Web browsers are expected to provide a standardized interface to all applications including client server applications. The ready availability and nearly universal knowledge of their use make them an ideal interface for people to work with databases. (Bornschein et al, 1997).

2. Dynamic HTML

The user interface agent accepts optimization model generated output and formats it into a dynamic hypertext document viewable by a Web browser and understandable by system users. (Tettelbach p. 30)

3. Graphical User Interface Design Guidelines

From a users perspective the user interface is the DSS. (Bhargava p. 35) Therefore, development of the SEP Billet Validation DSS user interface considered many of the principles for effective Graphical User Interface Design. The following guidelines were implemented in the DSS GUI:

- Knows the Users
- Simplifies Often Used Tasks
- Provides Feedback to the User
- Consistent
- Places Buttons Consistently
- Uses list boxes for long lists and dynamic data
- Organizes windows to match workflow
- Uses Feedback and In-Progress Messages
- Groups Data Fields that pertain to similar information

(Kamel, 1996)

The DSS user interface violates several of the GUI design guidelines which may prove to be a impedance to system implementation. The system experiences excessive delays when a large number of records are queried from the database. For numerous records, the utility function described in chapter three is implemented in SQL and requires longer processing time to calculate many billet utility scores. Additionally, some outputs of query data are not presented in standard format. For example, the display of a telephone number is missing the standard parentheses and appears as a string a characters.

E. A TOUR OF THE SEP BILLET VALIDATION DSS

This section will conduct a "tour" of the essential system functions which allow users to input data, query the database and update previously entered data. The prototype homepage contains links to external organizations with information relevant to manpower analysis, essential system functions such as input, output and update pages and background information pertaining to the thesis. (Figure 4-5)

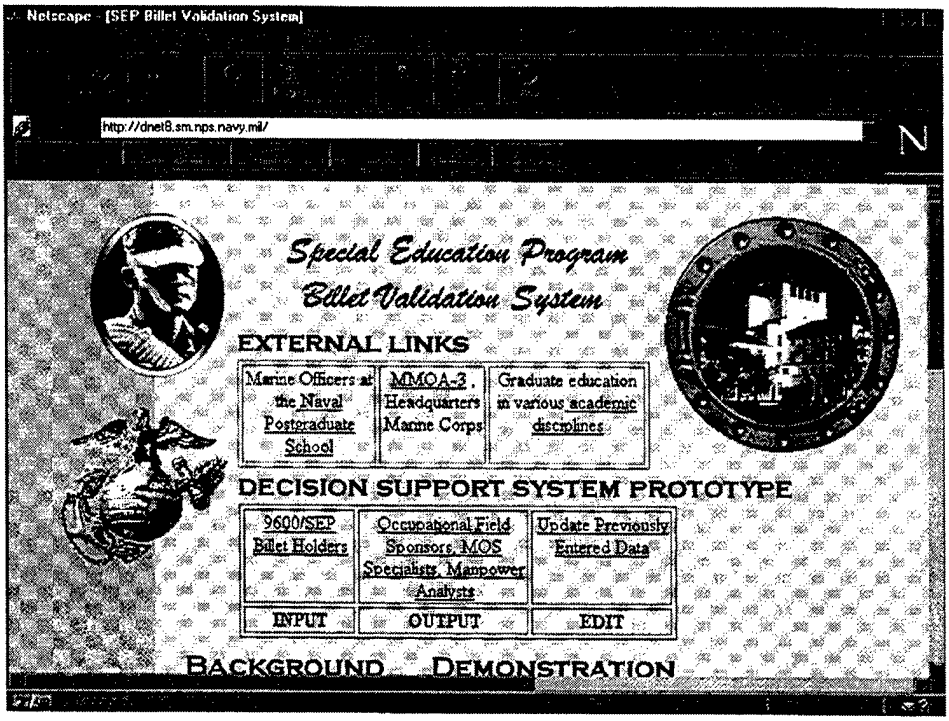


Figure 4-5

1. User Input

Figure 4-6 is a display of the screen where users enter information pertinent to themselves such as name, rank and contact information. Upon submitting information,

the authors are sent an email via the Cold Fusion Application server to inform them that a new user has interacted with the prototype. Once the billet holder has successfully entered his personal information he can link to the SEP billet data entry page (Figure 4-7 and Figure 4-8). Billet data entry has two parts: the first part is administrative information pertaining to the billet such as the organization in which the billet exists (Figure 4-7) and the second part is where the user performs the evaluation of the utility of the billet (Figure 4-8).

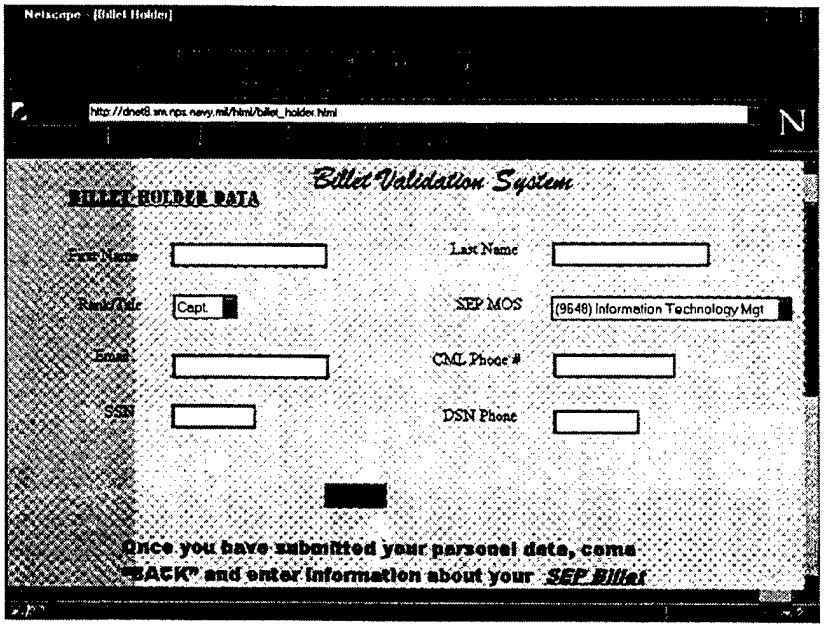


Figure 4-6

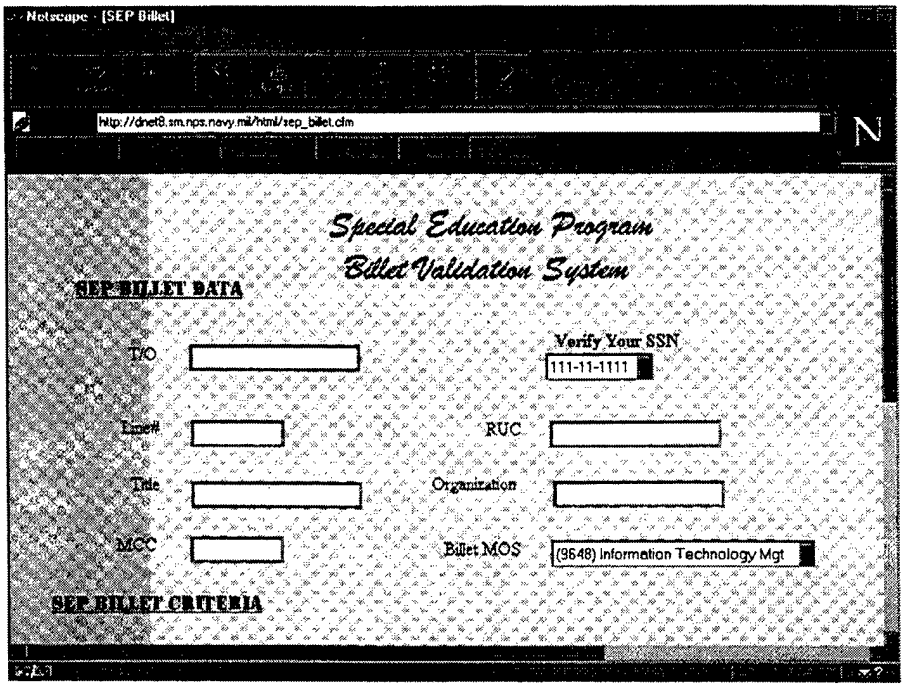


Figure 4-7

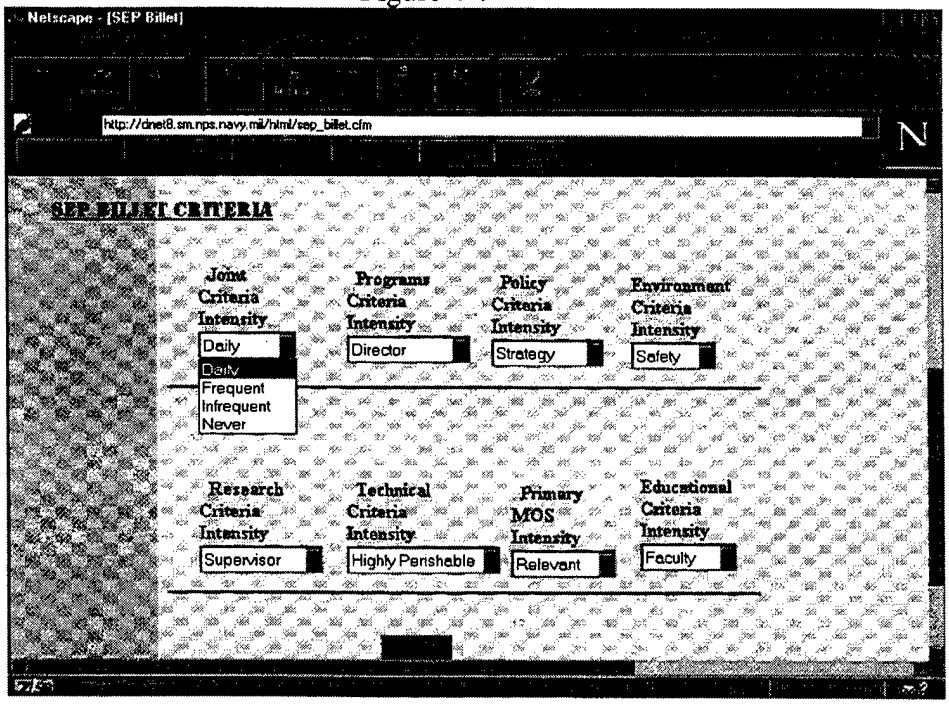


Figure 4-8

2. Querying the Database

The user can query the database for information in three ways: First, users can examine a graphical display of the criteria weights used to evaluate the utility of a billet (Figure 4-9). Second, users can view textual billet scores and detailed information about billets in the database or third, they can evaluate billet scores graphically (Figure 4-10). In order to access the detailed and graphic billet score functions, users are prompted for a username and password. When viewing the text only billet score function as shown in Figure 4-11, users are also asked if they would like to view additional information about the billet. Figure 4-12 shows the results of a more detailed query about a given billet in the database. The most user friendly tool of the system is shown in Figure 4-13. The graphic display of billet scores encompasses the evaluation and results of multiple attribute utility scores for all billets, allowing manpower analysts to quickly rate billets' requirements for graduate education.

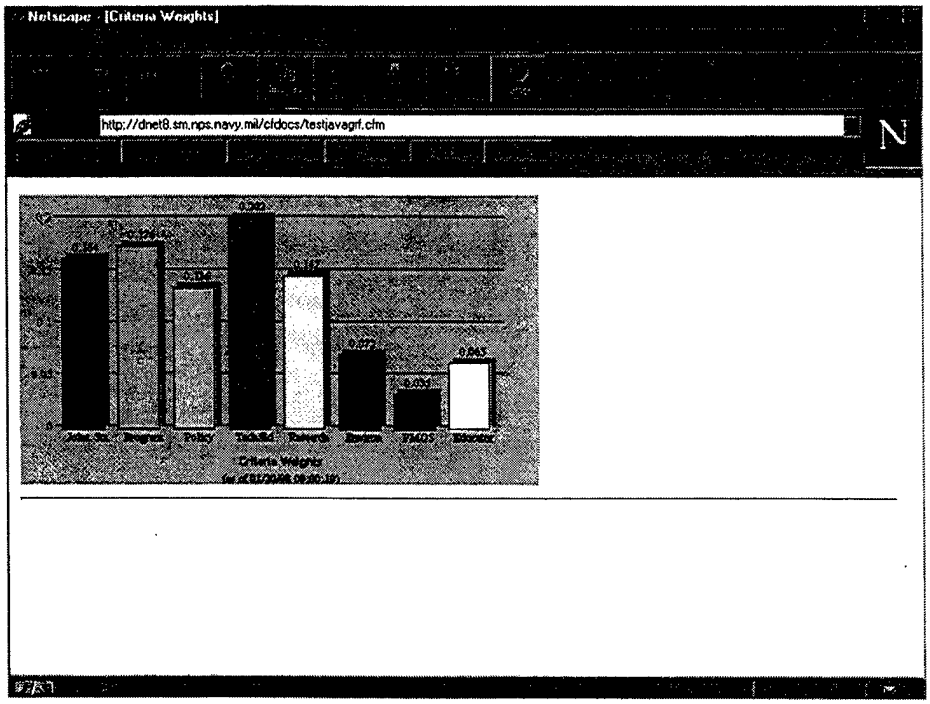


Figure 4-9

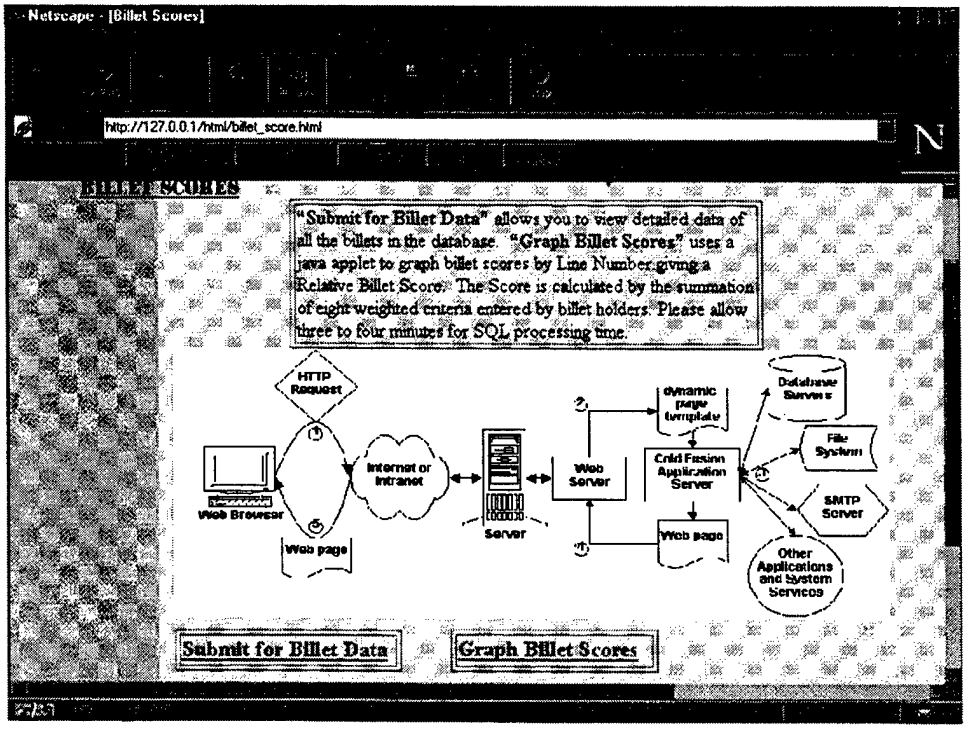


Figure 4-10

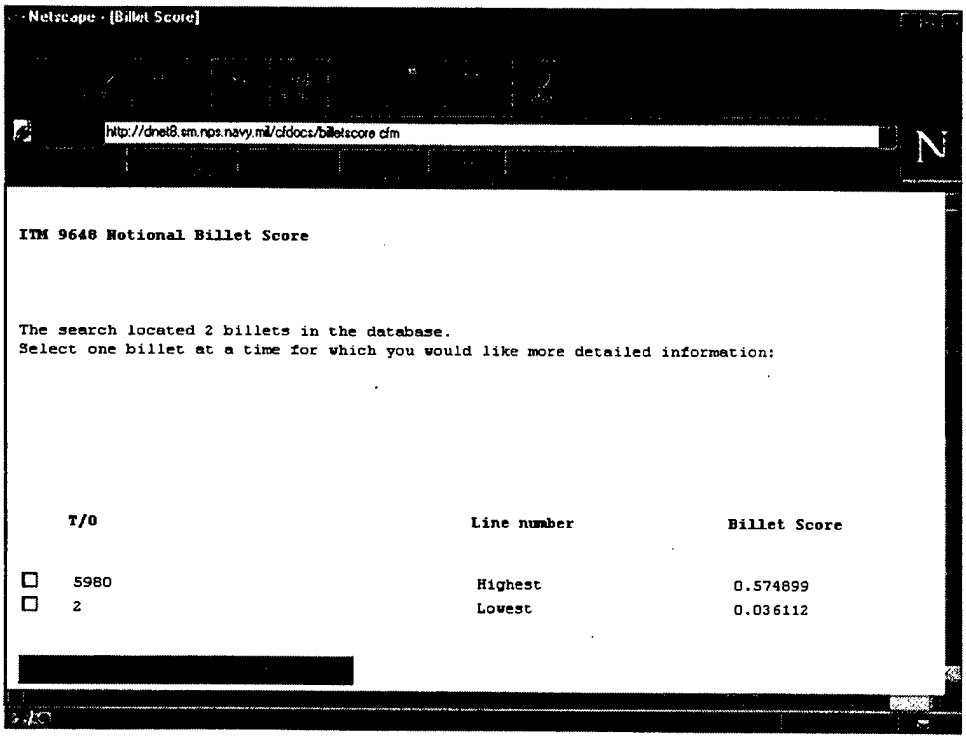

Netscape - [Billet Score]
http://dnet8.cm.nps.navy.mil/cfdocs/billetscore.cfm
ITM 9648 Notional Billet Score
The search located 2 billets in the database.
Select one billet at a time for which you would like more detailed information:
T/O
Line number
Billet Score
5980
Highest
0.574899
2
Lowest
0.036112

Figure 4-11

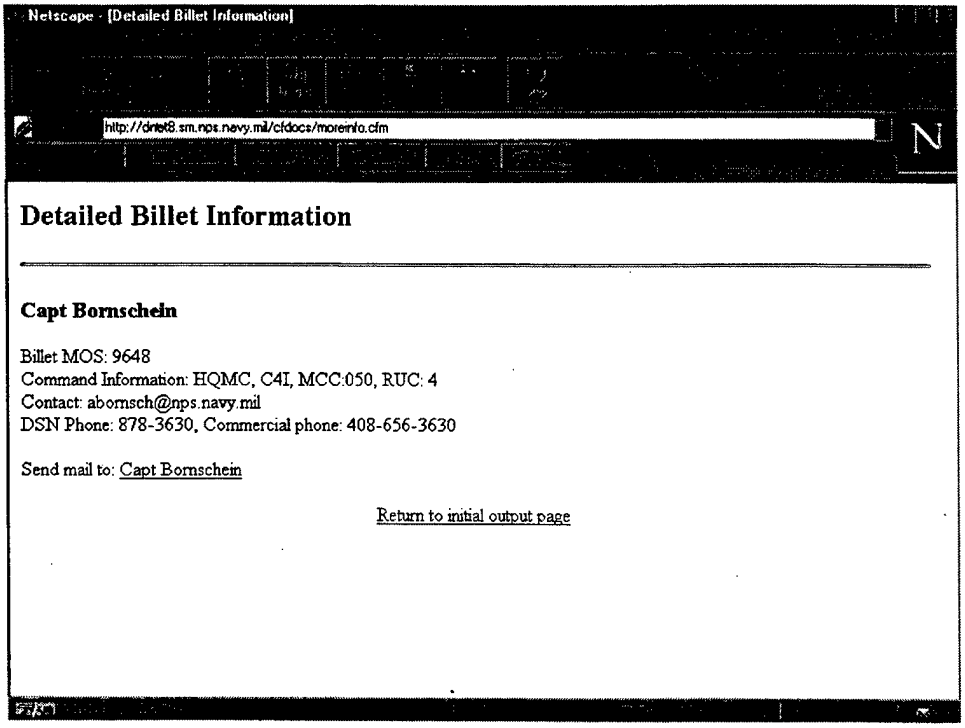

Netscape - [Detailed Billet Information]
http://dntet8.sm.nps.navy.mil/cfdocs/moreinfo.cfm
Detailed Billet Information
Capt Bornscheln
Billet MOS: 9648
Command Information: HQMC, C4I, MCC:050, RUC: 4
Contact: abornsch@nps.navy.mil
DSN Phone: 878-3630, Commercial phone: 408-656-3630
Send mail to: Capt Bornschein
Return to initial output page

Figure 4-12

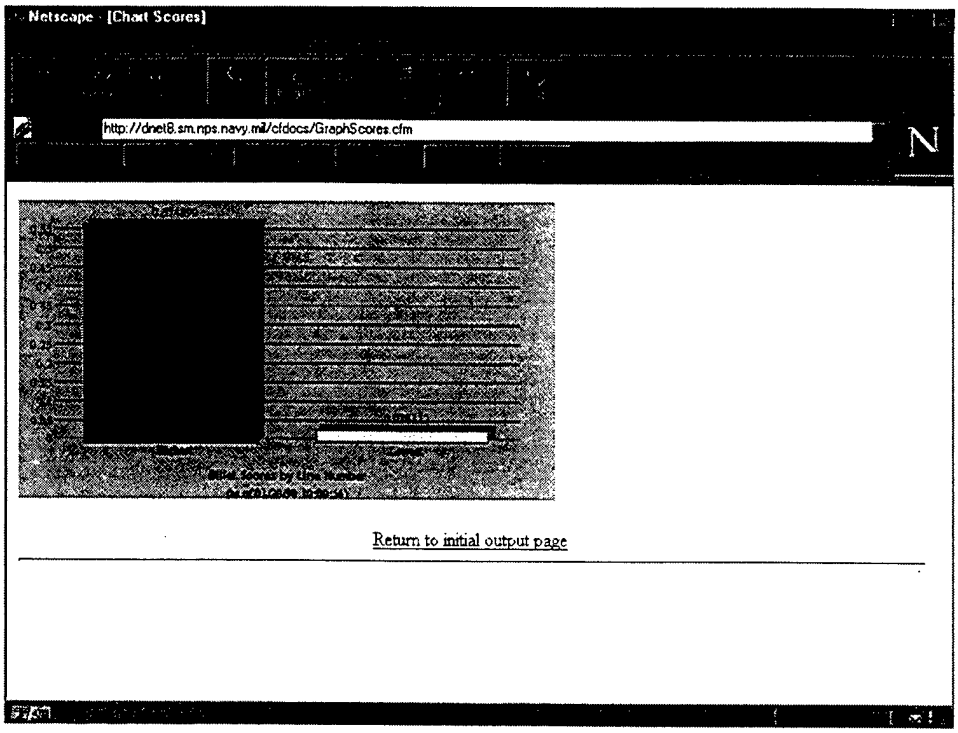


Figure 4-13

3. Updating Data

Information contained in the database can be updated using an indexed search by billet holder or by billet. The primary key necessary to search by billet holder is the SSN the user entered. Likewise, the billet search uses a composite primary key of the Table of Organization number for the billet along with the Line Number of the billet. The results of a search by billet holder is shown in Figure 4-14).

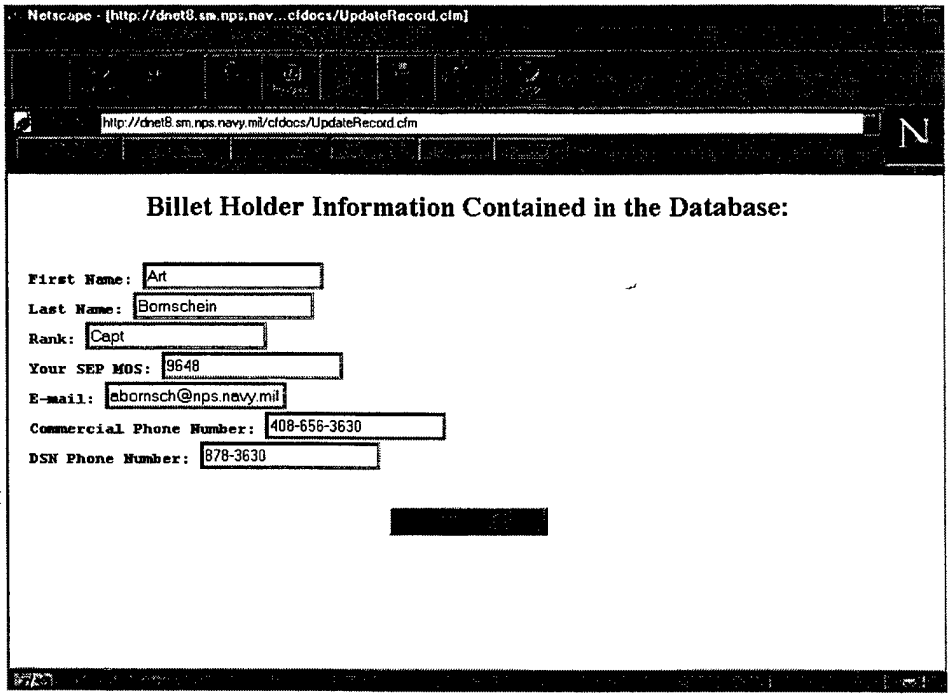


Figure 4-14

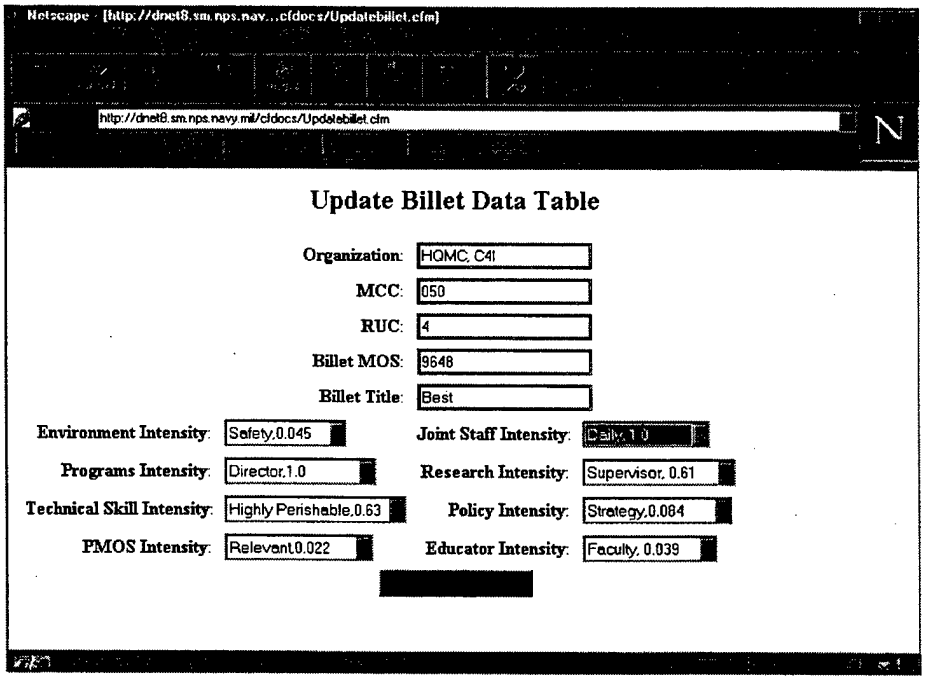


Figure 4-15

V. SYSTEM IMPLEMENTATION

A. APPLICATIONS FOR THE SYSTEM

1. Proof of Concept

The prototype is intended as a proof of concept to demonstrate that business process re-engineering and Information Technology, specifically, a Web-based DSS, can achieve dramatic improvements when applied to a manpower management process. Complete installation of the prototype is suitable as an area for future research. However, we offer the following analysis relevant to an implementation strategy.

2. Sensitivity to Political Climate

Brigadier General Blackman, President of the U.S. Marine Corps University, believes that in order to modernize the force for the future, the cut in expenses must come from the largest component of the budget, namely manpower. (Blackman, 1998) With the next quadrennial review just over two years away, the Marine Corps must continue to plan for the potential reduction in personnel to compete for finite budget resources. The prototype is useful in structuring the decision and prioritizing where the cut in manpower can occur.

3. Existing Billets

The SEP Billet Validation System adds value to the process of evaluating existing SEP billets to determine if the duties are commensurate with the additional educational requirements.

4. Proposed Billets

Marine Corps Orders mandate that a billet must be eliminated in order for a SEP billet to be added to the TMR. The prototype allows analysts and commands to identify billets which can be eliminated in favor of adding a SEP billet with a stronger requirement for a graduate educated officer.

5. Staffing Precedence

There are more SEP billets that exist on organizational structure charts than the available pool of officers possessing a relevant graduate degree. The prototype can assist the Occupational Field Sponsor and the Officer Assignment Branch prioritize to which billets officers should be assigned.

B. TEST PLAN

1. Validation

Validation is ensuring the system is solving the right problem (Walsh and Cheatham, 1994). In Chapter II, the authors used Systems Analysis and Workflow Analysis to validate the system. The underlying concept applied was that requirements dictate processes. The requirement is to assign officers to graduate billets. The intent of the prototype is to increase the efficiency of the process by ensuring the billets are valid needs of the Marine Corps.

2. Verification

Verification ensures the prototype functions correctly (Walsh and Cheatham,1994). The authors used a systematic testing strategy to verify that the functions of the prototype were performing their intended tasks.

3. Testing Strategy

The testing of the prototype was a planned process to confirm that the system meets the requirements and to disclose any errors.

a. Syntax Checking

Syntax checking was performed by the Cold Fusion ™ Administrator De-bugging tool which ships with the product. Errors in SQL and CFML statements were identified immediately upon running the module.

b. Unit Testing

Each page of the Web-based DSS constituted a single module. Each page was examined independently to ensure the module or page performed its intended function .

c. Integration Testing

Once modules or pages performed their intended functions independently of one another, they were brought together in a top-down fashion. Various parameters from one page were passed to another to ensure the modules operated free of errors as a system.

d. Performance Testing

The prototype was tested to gauge load, storage, response and recovery time. When a large number of records are stored in the database, the time required to execute the SQL utility function is excessive. A solution to the problem may be to allow records to be saved to a file after a given number are stored in the database. Implementing this function is reserved for future research related to the prototype.

e. Acceptance testing

Marine Officer Students, as future SEP billet holders, were selected to represent actual users of the system and asked to determine whether the system met their requirements. Several errors that were over-looked in integration testing by the developers was detected by the users and rectified.

C. CONVERSION AND TRAINING

1. Conversion

There are four approaches to conversion: immediate replacement, pilot program, phase-in, and parallel. (Walsh and Cheatham, 1994). By virtue of the scope of the prototype the authors have set the stage for a pilot conversion program. Specifically, the prototype addresses ITM (9648) billet criteria. The authors selected the Occupational Field Sponsor for Military Occupations 9648 (Information Technology Management) and 9646 (Computer Science) as the pilot implementation. Value of the system can be demonstrated by this officer with the assumption that an officer with a background in data systems management will be familiar with technology.

2. USER DOCUMENTATION

The prototype contains an on-line demonstration allowing users to navigate through input, output and update features. The value of using a Web browser is the

familiarity it has among user. Minimal time is needed for new users of the prototype to become acquainted with the Graphical User Interface.

VI. CONCLUSIONS

A. SUMMARY

1. Culminating Points

The authors discovered and applied several salient points in the conduct of this research. The authors chose to reduce the scope of the problem by limiting the process redesign to one element (of seven) that compose the SEP assignment process. By confining and narrowing the scope of the process, the authors were able to focus on breadth in development. User requirements dictate processes. The entire Special Education Program decomposed into seven Level One Processes all of which exist to accomplish the assignment of an officer into a valid billet.

Perhaps the greatest value of this research is in discovering, developing, and articulating the reasons Marines are assigned to graduate education. These criteria were translated into a decision model that may assist in the selection and assignment process. The prototype remains subjective, but adds finer granularity to the billet validation decision by applying AHP to the criteria discovered in the research.

In addition to articulating the reasons Marines are assigned to graduate education, the research has eliminated activities that were not adding value to the billet validation process. It also provides a familiar web interface and setting for geographically separated entities to remotely coordinate manpower activities.

B. AREAS FOR FUTURE RESEARCH

1. Future Functionality of the SEP Billet Validation System

The authors focused on one aspect, Billet Validation, as the heart of the SEP Assignment process. The other six areas need to be examined in equal thoroughness and revised as needed. After they are streamlined, these components should be added into the decision model to increase the versatility of the application. Additional work can be done in the area of distributed collaboration to eliminate the travel need for members of the selection board to all be in Washington, DC; selection boards could be conducted virtually allowing the board members to remain at their place of duty.

2. Relevance to Working Systems

The SEP Billet Validation System needs to connect to the Monitor Assignment Support System (MASS). A module could be added to facilitate data extraction and eliminate redundant data collection.

The operation factors that compose the SEP Billet Validation System lend themselves to application of Marine assignments world wide. A similar system could be constructed to assist all Monitors in making assignment decisions.

3. Applications for Web-based DSS beyond Manpower Management

The Marine Corps has enormous applications for any type of decision making that incorporates many variables. The availability of commercial off the shelf tools and the familiar "drag and drop" user interface makes multiple attribute utility theory and AHP suitable for building models for many Marine Corps applications. Call for Fire requests, targeting decisions, and Courses of Action determination in Staff Planning Models are a few of the possible applications.

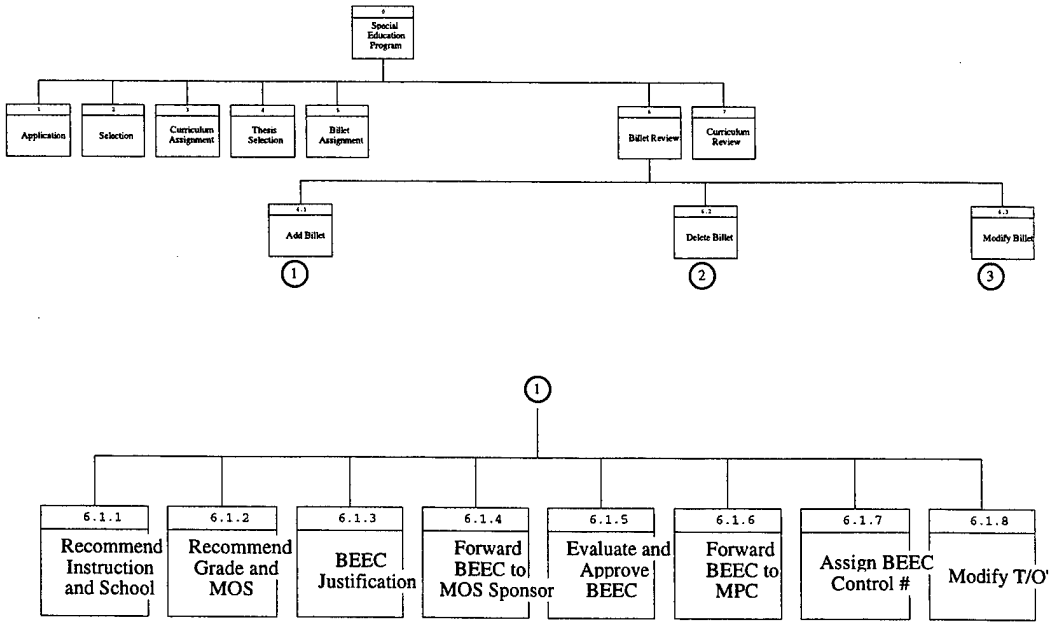
C. THE FUTURE

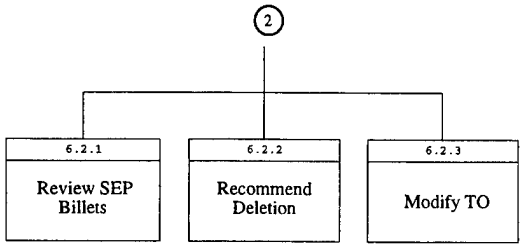
DoD, as a complex, geographically separated institution is ripe to take advantage of Internet based computing. Processors can be linked together to increase computing power and data can be shared at enormous rates. Travel costs can be reduced as people can collaborate on projects without leaving their duty stations.

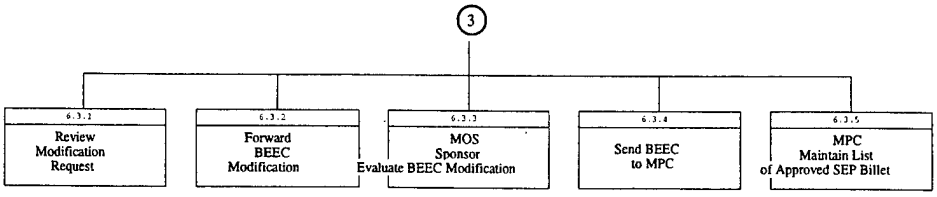
Disintermediation is the process of replacing the middleman and streamlining processes. The manpower process is a prime candidate for streamlining. Decision Support Systems can assist in making personnel assignments quicker and more cheaply.

APPENDIX A: DATA FLOW DIAGRAMS

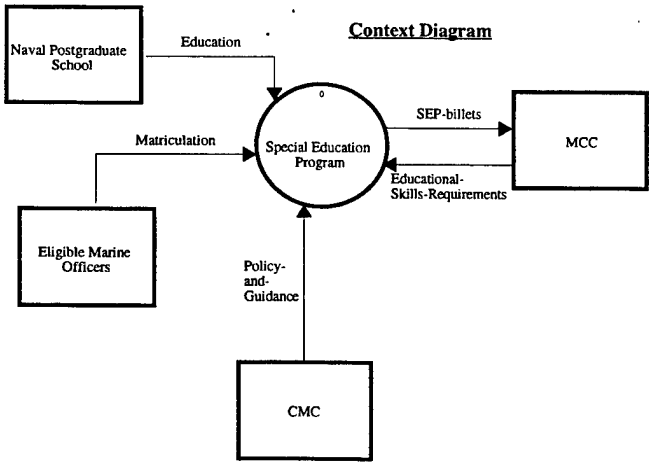
DECOMPOSITION DIAGRAM







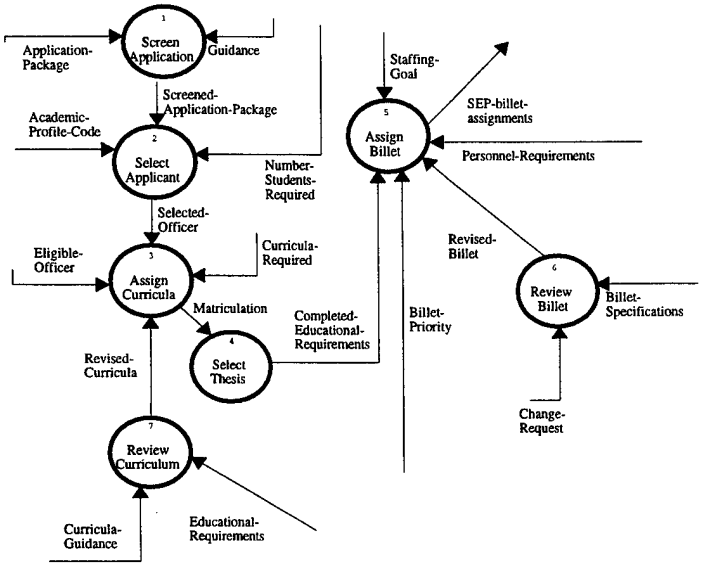
CONTEXT DIAGRAM



Visible Systems Corporation EDUCATIONAL/TRAINING Version

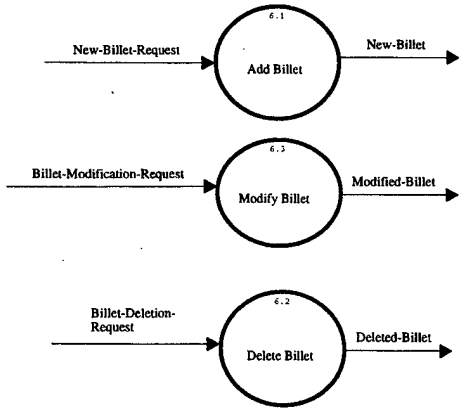
LEVEL ZERO

Special Education Program Diagram



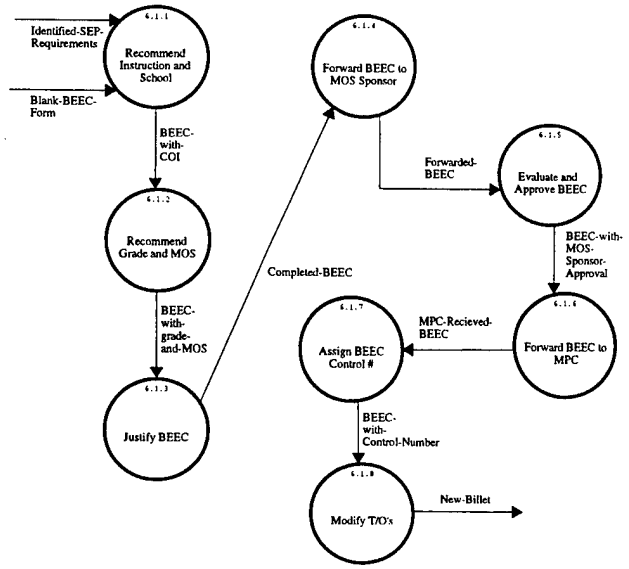
LEVEL ONE

Billet Evaluation Diagram

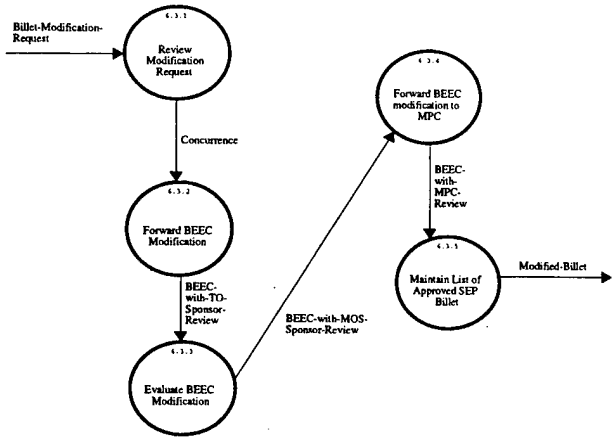


LEVEL TWO

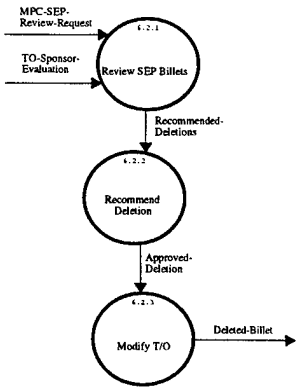
Add Billet Diagram



Modify Billet Diagram



Delete Billet Diagram



DATA DICTIONARY

Date: 1/14/98 Project: BEEC
Page: 1
Time: 1:08 PM

Summary Listing -- Alphabetically
All Entries -- Data Flow Diagrams

Academic-Profile-Code Data Flow
Description:
A three digit code derived from the QPR/GPA grade, Math, and Technical code for purposes of admissions.

Add Billet Process
Description:
Request by an agency to add a SEP billet

Application-Package Data Flow
Description:
Letter-type applications with endorsements, via the chain of command to CMC(MMOA-3)

Approved-Deletion Data Flow
Description:
CMC Manpower Control has the authority to delete the SEP designation from a billet

Assign BEEC Control # Process
Description:
A six digit Billet Education Evaluation Code control number assigned to a billet becoming a permanent part of the billet title and reflected in the T/O

Assign Billet Process
Description:
A manpower staffing process specifying the portion of a unit's structure that will be filled.

Assign Curricula Process

Description:

The process whereby those officers selected to attend Postgraduate education are assigned a curriculum based on outyear USMC MOS needs.

BEEC-with-COI Data Flow

Description:

On the BEEC form the submitting agency will select the course of instruction and the alternate which best fits the requirement of the billet.

BEEC-with-Control-Number Data Flow

Description:

CMC (Manpower Control) will assign a BEEC Control number to each new or revalidated BEEC.

BEEC-with-grade-and-MOS Data Flow

Description:

The recommended MOs and grade of the officer to fill the SEP billet. Located on section one of the BEEC.

BEEC-with-MOS-Sponsor-Approval Data Flow

Description:

BEEC with signature of T/O Sponsor/Code and date prior to forwarding BEEC to to the appropriate MOS Sponsor

BEEC-with-MOS-Sponsor-Review Data Flow

Description:

Evaluated and approved BEEC proposals and BEEC modifications within the appropriate MOS.

BEEC-with-MPC-Review Data Flow

Description:

After Manpower Control(MPC) review, a BEEC is assigned a BEEC control number for each new or revalidated billet.

BEEC-with-TO-Sponsor-Review Data Flow

Description:

T/O Sponsors review requests for new SEP requirements and ensure submission of a completed BEEC to CMC (MPC).

Billet-Deletion-Request Data Flow

Description:

T/O Sponsor, MOS Sponsor or CMC MPC recommendation to delete a billet from requiring special education

Billet-Modification-Request Data Flow

Description:

Changes to the existing SEP billet such as new grade and/or MOS. Indicated on the BEEC.

Billet-Priority Data Flow

Description:

A recommended billet assignment listing to facilitate the assignment of personnel to the most necessary billets. Done by the MOS Sponsor.

Billet-Specifications Data Flow

Description:

Specific Billet requirements such as grade, MOS, special education requirements and justification.

Blank-BEEC-Form Data Flow

Description:

Paperwork which initiates the addition of a new SEP billet or modification of an existing billet.

Change-Request Data Flow

Description:

The request by an agency to change, add or delete a SEP billet.

CMC Source/Sink

Description:

Commandant of the Marine Corps

Completed-BEEC Data Flow

Description:

Upon fulfilling all required entires on the Billet Educational Evaluation Certificate the form is complete.

Completed-Educational-Requirements Data Flow

Description:

Fulfillment of the requirements for the degree of Master of Science in a specific discipline.

Concurrence Data Flow

Description:

Agreement by the MOS Sponsor that the billet modification is legitimate

Curricula-Guidance Data Flow

Description:

In the review of a course of instruction, guidance and feedback is provided to support the skills imparted to students.

Curricula-Required Data Flow

Description:

The curriculum that a student must undergo in order to fulfill the Essential Skills for the SEP MOS.

Delete Billet Process

Description:

The process whereby a SEP billet is deleted from having the special education requirement for its incumbent

Deleted-Billet Data Flow

Description:

A billet which no longer requires a special education requirement.

Education Data Flow

Description:

Instilling skills and knowledge during a period of matriculation.

Educational-Requirements Data Flow

Description:

The necessary skills that must be taught to an officer in order to fulfill the duties of a SEP billet

Educational-Skills-Requirements Data Flow

Eligible Marine Officers Source/Sink

Description:

Pool of applicants who have been submitted applications.

Eligible-Officer Data Flow

Description:

Those applicants who have been screened by the admissions officer and qualify academically for at least one curricula.

Evaluate and Approve BEEC Process

Description:

The process whereby a HQ agency has reviewed a new or modified submission for completeness and agrees with its content

Evaluate BEEC Modification Process

Description:

Process whereby an agency examines a proposed modification to a SEP billet.

Forward BEEC Modification Process

Description:

Submission of a BEEC to the next agency in the review process.

Forward BEEC modification to MPC Process

Description:

Upon completing an evaluation of a BEEC modification, the T/O Sponsor will forward the BEEC to the MOS Sponsor for evaluation.

Forward BEEC to MOS Sponsor Process

Description:

Submission of a BEEC by a T/O Sponsor to the next responsible reviewing agency.

Forward BEEC to MPC Process

Description:

Final submission of a BECC from the MOS Sponsor to the approving authority.

Forwarded-BEEC Data Flow

Description:

A BEEC form that is in the transitional state between reviewing agencies

Guidance Data Flow

Description:

Recommendations by a higher HQ

Identified-SEP-Requirements Data Flow

Description:

Criteria that sets forth the requirements of a billet designated for special education incumbent

Justify BEEC Process

Description:

A process in which agencies submitting a BEEC , explain why the billet requires the special education

Maintain List of Approved SEP Billet Process

Description:

MPC will maintain a List of all SEP billets for dissemination to other HQ agencies for planning and assignment purposes.

Matriculation Data Flow

Description:

Attendance at an academic institution

MCC Source/Sink

Description:

Monitored Command Code

Modified-Billet Data Flow

Description:

A billet that has undergone the process of review and has been changed in terms of grade, MOS or curriculum.

Modify Billet Process

Description:

The process whereby a billet has been changed in terms of grade, MOS or curriculum.

Modify T/O Process

Description:

The process whereby MPC will change the Table of Organization structure of a unit

Modify T/O's Process

Description:

The process whereby MPC will change the Table of Organization structure of a unit

MPC-Recieved-BEEC Data Flow

Description:

Manpower Control has receipt of the Billet Educational Evaluation Certificate.

MPC-SEP-Review-Request Data Flow

Description:

Manpower Control has initiated a review of a SEP billet(s)

Naval Postgraduate School Source/Sink

Description:

DoN academic institution

New-Billet Data Flow

Description:

A proposal for creation of a SEP billet.

New-Billet-Request Data Flow

Description:

An initiation by an agency to start the process for creation of a billet

Number-Students-Required Data Flow

Description:

A target planning fator for the selection board to achieve ion assigning officers to NPS.

Personnel-Requirements Data Flow

Description:

An input to the assignment process specifying number of billets to fill, i.e a staffing goal.

Policy-and-Guidance Data Flow

Description:

Guidelines in which to operate the Manpower processes

Recommend Deletion Process

Description:

A proposal to remove requirement from a SEP billet or to remove it from a T/O.

Recommend Grade and MOS Process

Description:

Input on the BEEC form as to the desired grade/rank and SEP MOS of the individual to fill the billet.

Recommend Instruction and School Process

Description:

Input on the BEEC form as to the desired curriculum and institution of the individual to fill the billet.

Recommended-Deletions Data Flow

Description:

The removed requirement from a SEP billet or removal from a T/O.

Review Billet Process

Description:

Examination of a billet to recommend modofocation or deletion.

Review Curriculum Process

Description:

The process whereby Academic Associates, Curriculum Sponsors and Student review the existing instruction for relevance to future billets

Review Modification Request Process

Description:

The process whereby an agency examines a request to change portions of a SEP billet.

Review SEP Billets Process

Description:

The process whereby SEP billets are justified for requiring graduate education

Revised-Billet Data Flow

Description:

A SEP billet that has undergone change from its original requirements.

Revised-Curricula Data Flow

Description:

Curricula that has undergone a change from its previous content.

Screen Application Process

Description:

Attendance at NPS is solicited annually by a Marine Corps Bulletin seeking eligible officers.

Screened-Application-Package Data Flow

Description:

Admission documents that have been reviewed.

Select Applicant Process

Description:

Process whereby a board of seven officers convene to decide the officers that will attend NPS.

Select Thesis Process

Description:

The process whereby a graduate student determines the focus area of research for his/her thesis

Selected-Officer Data Flow

Description:

An officer who has been determined qualified to attend NPS by a selection board

SEP-billet-assignments Data Flow

Description:

The billets which require an officer with a 9600 MOS and graduate education that must be filled.

SEP-billets Data Flow

Description:

Billets in the Marine Corps which require incumbents to possess graduate level education.

Special Education Program Process

Description:

The selection, assignment, and education of Marine Corps officers to obtain a graduate degree at the Naval Postgraduate School.

Staffing-Goal Data Flow

Description:

The number of billets that need to be filled.

TO-Sponsor-Evaluation Data Flow

Description:

The agency responsible for the specific Table of Organization will review and recommend actions to perform on a billet.

APPENDIX B: GLOSSARY

96XX - Any Special Education Program billet or SEP qualified Marine (SEP MOS's are four digit numbers that all start with 96)

ADP - Advanced Degree Program

AFIT - Air Force Institute of Technology

AHP - Analytic Hierarchy Process

AI - Artificial Intelligence

AIS - Automatic Information System

APC - Academic Profile Code, a code given by NPS to note an applicant's academic qualifications

ARPA - Advanced Research Projects Agency

ART - a real smart guy, used to be an Artillery Officer lateral moved to become an 0602

AS-IS - "as is", the current state of a process

ASR - Authorized Strength Report, how many and which type of people each MCC rates

AWS - Amphibious Warfare School

BEEC - Billet Educational Evaluation Certificate

BPR - Business Process Re-engineering

BPI - Business Process Improvement

BS - Bachelor's Degree of Science

C4I - Command, Control, Communications, Computers, and Intelligence

CASE - Computer Aided Software Engineering

CGI - Common Gateway Interface

CMC - Commandant of the Marine Corps, used to refer to the actual individual or his office

CO - Commanding Officer

COTS - Commercial Off -The- Shelf Technology, buy it instead of making it

CSR - Command Staffing Report

CSS - Combat Service Support

DARPA - Defense Advanced Research Projects Agency

DBMS - Database Management System

DC/S - Deputy Chief of Staff, individual or office that assists Commandant

DDE - Dynamic Data Exchange

DFD - Data Flow Diagrams

DOD - Department of Defense

DSS - Decision Support System

E-MAIL - Electronic Mail

FMF - Fleet Marine Force, that fairy wonderland that while in it you can't wait to get out yet once out spend your time pulling your hair out trying to get back

FTP - File Transfer Protocol

FY - Fiscal Year

GDSS - Group Decision Support System

GUI - Graphical User Interface

HQMC - Headquarters, Marine Corps

HTML - Hypertext Markup Language

I&L - Installations and Logistics

ISDN - Integrated Services Data Network

IT - Information Technology

ITM - Information Technology Management

JTF - Joint Task Force

LAN - Local Area Network

M&RA - Manpower and Reserve Affairs

MASS - Monitor Assignment Support System, prototype created by Cheatham and Walsh

MAUT - Multiple Attribute Utility Theory

MBS - Master Brief Sheet

MCBUL - Marine Corps Bulletin

MCC - Monitored Command Code, a major command location

MCDM - Multiple Criteria Decision Making

MCO - Marine Corps Order

MIKE - a combat engineer who wants to go back to destroying things

MMOA - Manpower Management and Officer Assignments, branch of HQMC that moves officers around

MMS - Model Management System

MOS - Military Occupational Specialty

MPC - Manpower Control

MRDP - Manpower Requirements Determination Program

MS - Master's Degree of Science

NASA - National Aeronautical and Space Agency

NPS - Naval Postgraduate School

OccField Sponsor - Occupational Field Sponsor, focal point for Occupational Field management and MOS development

ODBC - Open Database Connectivity

OLE - Object Link Embedding

OIC - Officer-in-Charge, the leader of a unit that does not rate a Commanding Officer

OMPF - Officer Master Personnel File

OOTW - Operations Other Than War

OR - Operations Research

OSGM - Officer Staffing Goal Model

OSR - Occupational Staffing Report

POM - Program Objective Memorandum, the document that gives the money to spend

PRCM - Personnel Requirements Criteria Manual

SECDEF - Secretary of Defense, the office or the individual

SEP - Special Education Program

SQL - Structured Query Language

T/E - Table of Equipment

TELOS - acronym used in developing a rapid prototype decision support system; the factors of consideration are Technical feasibility, Economic feasibility, Legal ramifications, Operational requirements, and project Schedule

TFSDIV - Total Force Structure Division, the part of Manpower at HQMC that is responsible for manipulating the Marine Corps' T/O

T/MR - Table of Manpower Requirements

T/O - Table of Organization

TMR - Table of Manpower Requirements

TO-BE - "to be", the future desired state of re-engineering

TOCA - Table of Organization Change Authorization

TOCR - Table of Organization Change Request

UIC - Unit Identification Code

UIMS - User Interface Management Software

URL - Uniform Resource Locator

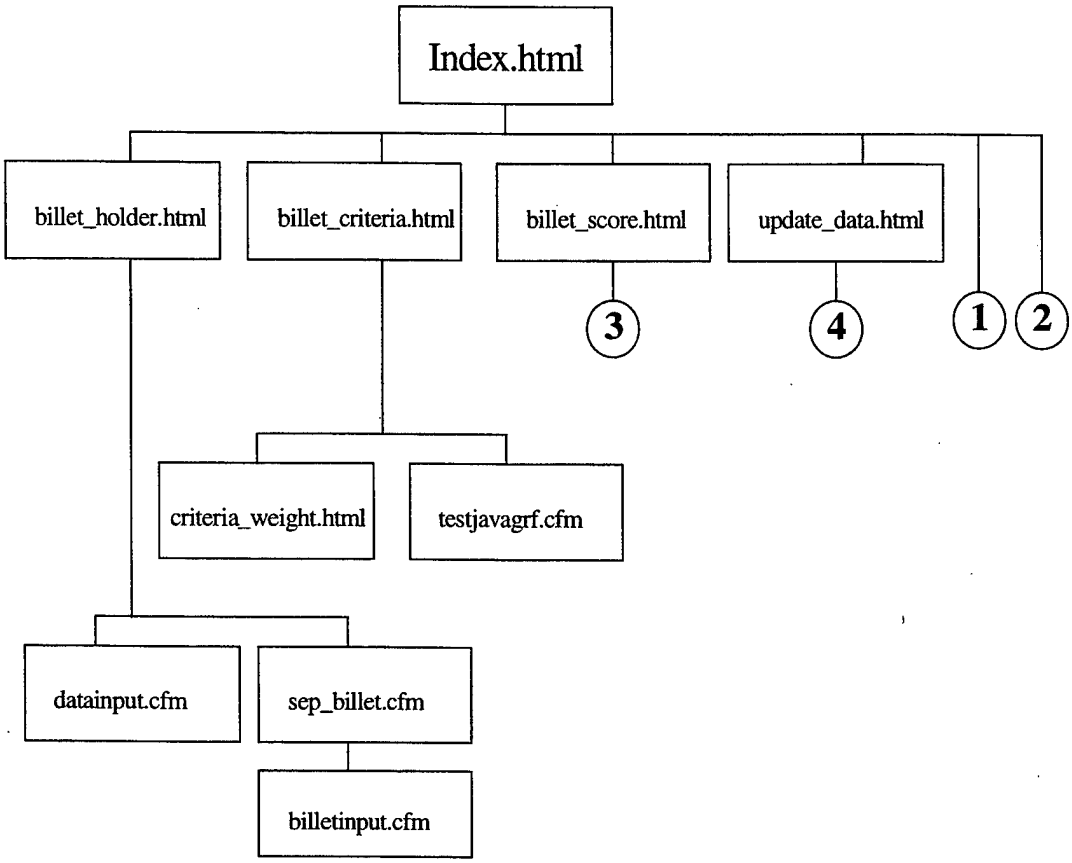
USACE - United States Army Corps of Engineers

USMC - United States Marine Corps

WWW - World Wide Web

APPENDIX C: USER INTERFACE SOURCE CODE

1. STRUCTURE CHART



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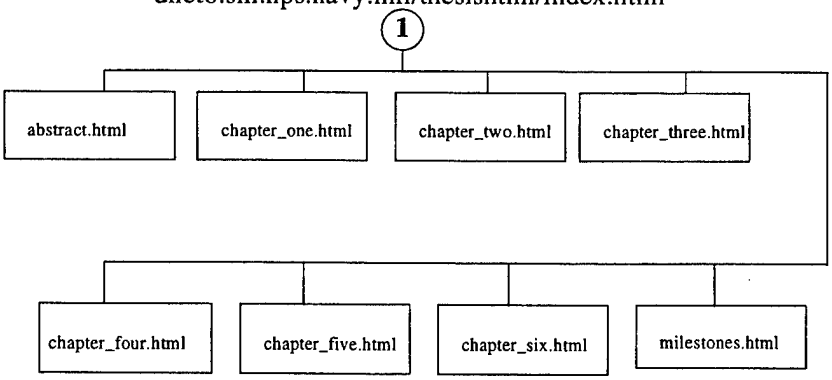

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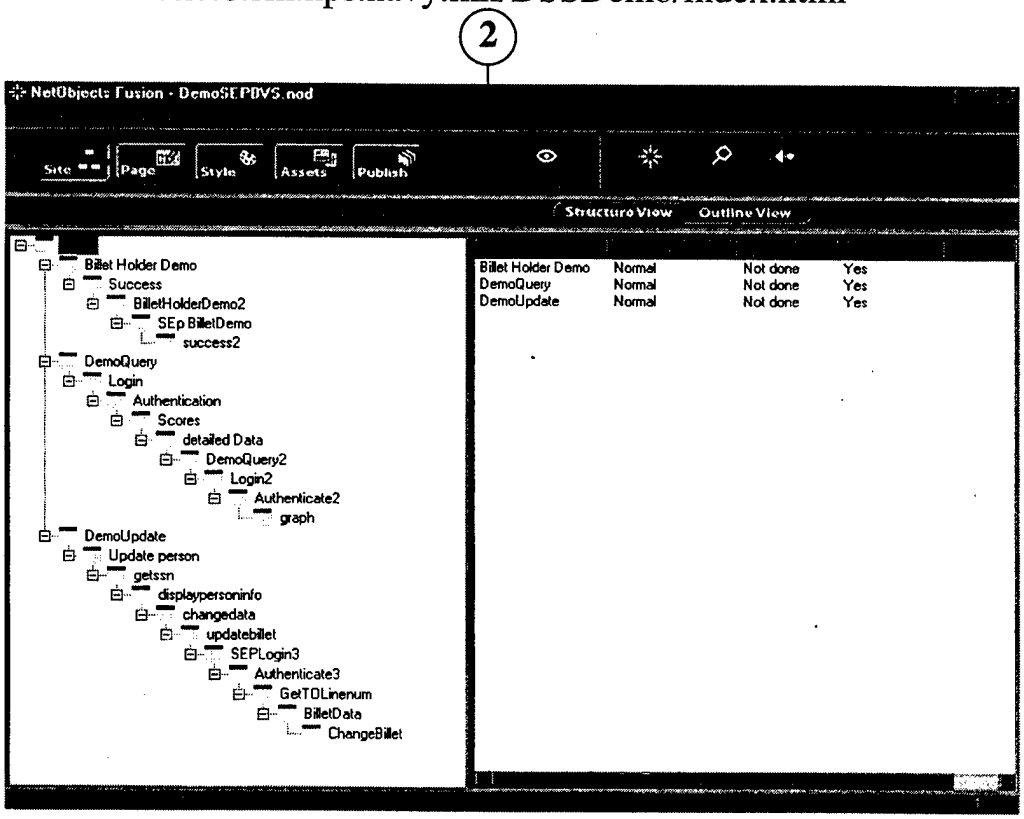

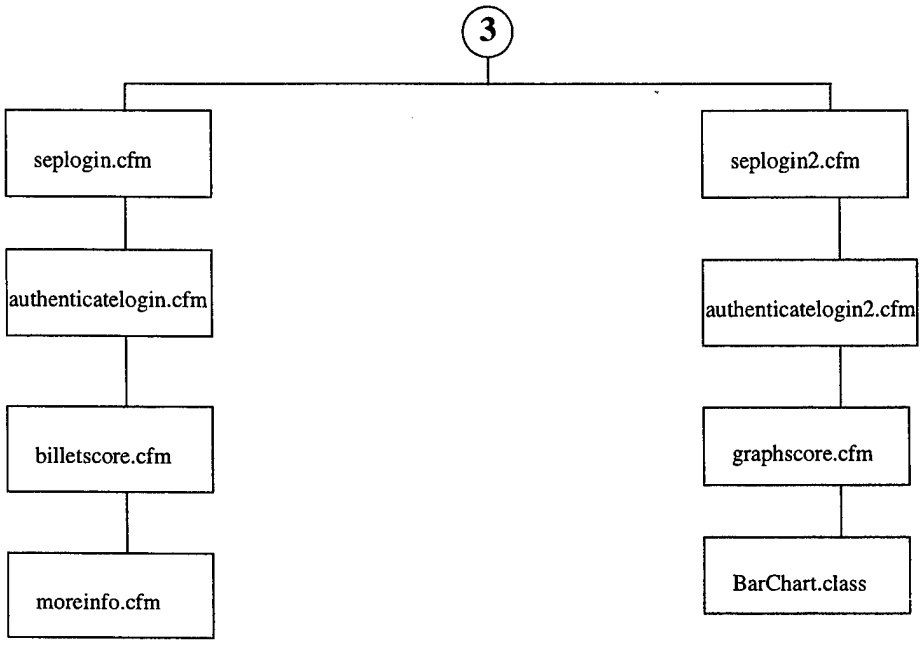
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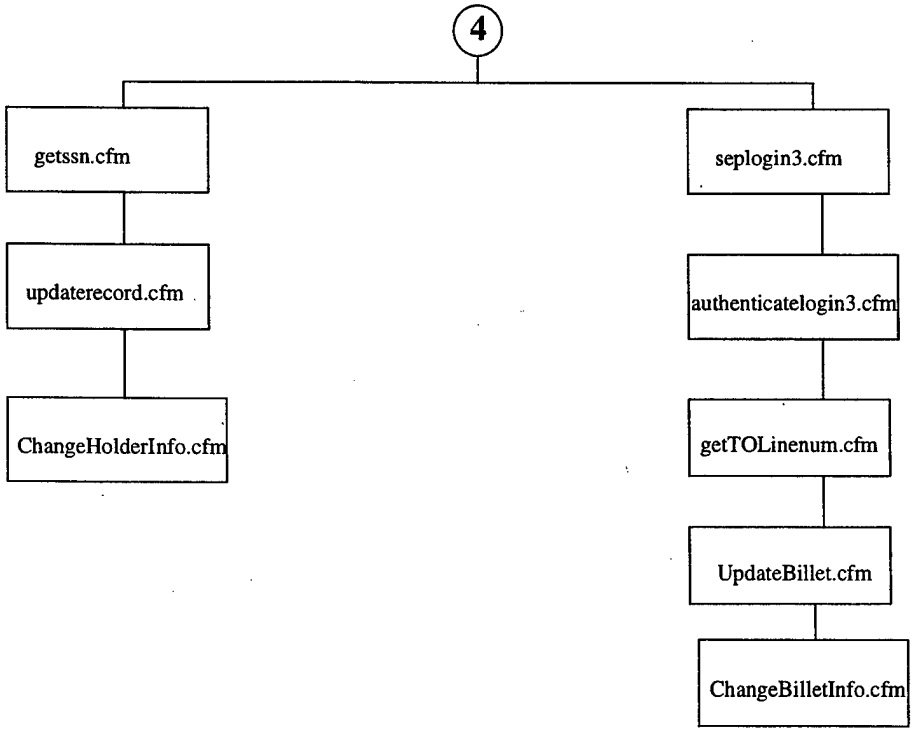
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2. USER INPUT FORMS

billet_holder.html

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        <TD COLSPAN=4></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=8></TD>
        <TD COLSPAN=4 ROWSPAN=4 WIDTH=83>
<P><FONT>DSN Phone </FONT></TD>

        <TD COLSPAN=11 HEIGHT=3></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=4></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=8></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=2 ROWSPAN=4 WIDTH=80><INPUT TYPE="text" NAME="DSNphone"
VALUE="" SIZE=10 MAXLENGTH=10 ></TD>
        <TD COLSPAN=6 HEIGHT=18></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=4></TD>
        <TD COLSPAN=16></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=6 HEIGHT=2></TD>
 </TR>
```

```
  <TR VALIGN="top" ALIGN="left">
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        <TD COLSPAN=3></TD>
        <TD COLSPAN=6 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=30></TD>
        <TD COLSPAN=6 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=38 HEIGHT=48></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=18></TD>
        <TD COLSPAN=3 ROWSPAN=1 WIDTH=102> <INPUT Type="Submit"
VALUE="Submit"></TD>

        <TD COLSPAN=17 HEIGHT=25></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=38 HEIGHT=25></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=5></TD>
        <TD COLSPAN=28 ROWSPAN=1 WIDTH=526>
<P><FONT SIZE="+1" FACE="Arial Black,Helvetica Black,LB Helvetica Black">Once you have
submitted your personal data, come "BACK" and enter information about your  </FONT><A
HREF="http://dnet8.sm.nps.navy.mil/html/sep_billet.cfm"><FONT SIZE="+1" FACE="Arial
Black,Helvetica Black,LB Helvetica Black"><I>SEP Billet</FONT></I></A><FONT SIZE="+1"
FACE="Arial Black,Helvetica Black,LB Helvetica Black"><I></FONT></I></TD>

        <TD COLSPAN=5 HEIGHT=76></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=38 HEIGHT=23></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=5></TD>
        <TD COLSPAN=8 ROWSPAN=1 WIDTH=102>
         <TABLE BORDER=0 CELLSPACING=0 CELLPADDING=1 >
         <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=100 HEIGHT=25><A HREF="../index.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5ace67.gif"  BORDER=0
ALT=" Index " ></A></TD>
         </TR>
         </TABLE></TD>
        <TD COLSPAN=25 HEIGHT=25></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=38 HEIGHT=308></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
```

```
        <TD COLSPAN=38 HEIGHT=0></TD>
  </TR>
 </TABLE>
</FORM></BODY>
</HTML>
```

datainput.cfm

```
<!---------------------------------------------------------------------
        This Cold Fusion Template is responsible for the entry of data into
   the database. It uses fields passed from the calling HTML page
   and inserts them into your database table. You can customize this
        template to improve the look or the behavior of your application.
---------------------------------------------------------------------->

<!---------------------------------------------------------------------
        This is the CFINSERT tag controlling the entry of data into the
        database table.
---------------------------------------------------------------------->

<CFINSERT DATASOURCE="SEP Billet Validation" TABLENAME="BilletHolder">

<!---------------------------------------------------------------------
        If you chose to forward the data using e-mail the code below would
        contain the CFMAIL tag responsible for generation of dynamic e-mail.
---------------------------------------------------------------------->
<CFMAIL FROM="#email#"
                TO="abornsch@nps.navy.mil,mjjernig@nps.navy.mil"
                SUBJECT="New information has been entered into the SEP website">
Name: #FirstName# #LastName#
Rank: #Rank#

</CFMAIL>



<HTML><BODY>
<HEAD><TITLE>Submission Successful</TITLE></HEAD>
<!---------------------------------------------------------------------
<CENTER><IMG SRC="dataentry.gif"></CENTER>
---------------------------------------------------------------------->

<BLOCKQUOTE><HR>
<CENTER><H1>Submission Processed Successfully</H1></CENTER>
<P>The information you supplied was entered successfully into the database. <P>Please go "Back" and
enter data about your SEP Billet.</CENTER>
<HR></BLOCKQUOTE>

</BODY></HTML>
```

sep_billet.cfm

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
```

```
<HTML>
<HEAD>
<TITLE>SEP Billet</TITLE>
<META NAME="Generator" CONTENT="NetObjects Fusion 2.0 for Windows">

</HEAD>

<BODY BACKGROUND="../assets/images/FredsBackground.gif" LINK="#660000" VLINK="#996600"
TEXT="#333333">

<FORM NAME="Joint Staff Intensity" ACTION="http://dnet8.sm.nps.navy.mil/Cfdocs/billetinput.cfm"
METHOD=POST>

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ALIGN="left">
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        <TD COLSPAN=1 WIDTH=23><IMG SRC="../assets/images/dot_clear.gif" WIDTH=23
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        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=33><IMG SRC="../assets/images/dot_clear.gif" WIDTH=33
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HEIGHT=1 BORDER=0></TD>
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HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
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HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=23><IMG SRC="../assets/images/dot_clear.gif" WIDTH=23
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HEIGHT=1 BORDER=0></TD>
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HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
```

```
        <TD COLSPAN=1 WIDTH=17><IMG SRC="../assets/images/dot_clear.gif" WIDTH=17
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        <TD COLSPAN=1 WIDTH=27><IMG SRC="../assets/images/dot_clear.gif" WIDTH=27
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        <TD COLSPAN=1 WIDTH=7><IMG SRC="../assets/images/dot_clear.gif" WIDTH=7
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HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
```

```
        <TD COLSPAN=1 WIDTH=14><IMG SRC="../assets/images/dot_clear.gif" WIDTH=14
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HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
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HEIGHT=1 BORDER=0></TD>
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HEIGHT=1 BORDER=0></TD>
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</TR>

  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=10></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=20></TD>
        <TD COLSPAN=22 ROWSPAN=2 WIDTH=334>
<P ALIGN="CENTER"><FONT COLOR="#FF0000" SIZE="+3" FACE="Brush Script
MT"> Special Education Program Billet Validation System</FONT></TD>

        <TD COLSPAN=11 HEIGHT=66></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=2></TD>
        <TD COLSPAN=17 ROWSPAN=2 WIDTH=198>
<P><FONT SIZE="+1" FACE="Stencil"><U>SEP Billet Data</FONT></U></TD>

        <TD COLSPAN=1></TD>
        <TD COLSPAN=11 HEIGHT=16></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=2></TD>
        <TD COLSPAN=34 HEIGHT=31></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=35></TD>
        <TD COLSPAN=10 ROWSPAN=2 WIDTH=146> <CFQUERY Name="selectssn"
Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW BilletHolder.SSN
FROM BilletHolder; ">
<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Verify Your SSN</B>
<SELECT NAME="BilletHolderSSN_FK">
```

```
<CFOUTPUT QUERY="selectssn"><OPTION VALUE="#SSN#">
                        #SSN#

                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=8 HEIGHT=7></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=6></TD>
        <TD COLSPAN=4 ROWSPAN=2 WIDTH=30>
<P><FONT>T/O</FONT></TD>

        <TD COLSPAN=2></TD>
        <TD COLSPAN=12 ROWSPAN=3 WIDTH=160><INPUT TYPE="text" NAME="TblOrg"
VALUE="" SIZE=20 MAXLENGTH=25 ></TD>
        <TD COLSPAN=11></TD>
        <TD COLSPAN=8 HEIGHT=19></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=6></TD>
        <TD COLSPAN=2></TD>
        <TD COLSPAN=29 HEIGHT=2></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12></TD>
        <TD COLSPAN=29 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=27></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
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        <TD COLSPAN=6 ROWSPAN=3 WIDTH=38>
<P><FONT>Line#</FONT></TD>

        <TD COLSPAN=42 HEIGHT=1></TD>
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        <TD COLSPAN=5></TD>
        <TD COLSPAN=21></TD>
        <TD COLSPAN=2 ROWSPAN=4 WIDTH=33>
<P><FONT>RUC</FONT></TD>

        <TD COLSPAN=19 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=5></TD>
        <TD COLSPAN=2></TD>
        <TD COLSPAN=5 ROWSPAN=2 WIDTH=80><INPUT TYPE="text" NAME="Linenum"
VALUE="" SIZE=10 MAXLENGTH=10 ></TD>
```

```
        <TD COLSPAN=14></TD>
        <TD COLSPAN=2></TD>
        <TD COLSPAN=12 ROWSPAN=2 WIDTH=160><INPUT TYPE="text" NAME="RUC"
VALUE="" SIZE=20 MAXLENGTH=25 ></TD>
        <TD COLSPAN=5 HEIGHT=19></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=13></TD>
        <TD COLSPAN=14></TD>
        <TD COLSPAN=2></TD>
        <TD COLSPAN=5 HEIGHT=3></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=32></TD>
        <TD COLSPAN=19 HEIGHT=1></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=20></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=28></TD>
        <TD COLSPAN=6 ROWSPAN=5 WIDTH=82>
<P><FONT>Organization</FONT></TD>

        <TD COLSPAN=19 HEIGHT=1></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
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        <TD COLSPAN=2 ROWSPAN=3 WIDTH=28>
<P><FONT>Title</FONT></TD>

        <TD COLSPAN=19></TD>
        <TD COLSPAN=19 HEIGHT=5></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=7></TD>
        <TD COLSPAN=19></TD>
        <TD COLSPAN=4></TD>
        <TD COLSPAN=11 ROWSPAN=3 WIDTH=160><INPUT TYPE="text"
NAME="Organization" VALUE="" SIZE=20 MAXLENGTH=30 ></TD>
        <TD COLSPAN=4 HEIGHT=1></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=7></TD>
        <TD COLSPAN=4></TD>
        <TD COLSPAN=12 ROWSPAN=3 WIDTH=160><INPUT TYPE="text" NAME="BilletTitle"
VALUE="" SIZE=20 MAXLENGTH=30 ></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=4></TD>
        <TD COLSPAN=4 HEIGHT=20></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
```

```
        <TD COLSPAN=13></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=4></TD>
        <TD COLSPAN=4 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=13></TD>
        <TD COLSPAN=28 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=22></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=4></TD>
        <TD COLSPAN=5 ROWSPAN=4 WIDTH=41>
<P><FONT>MCC</FONT></TD>

        <TD COLSPAN=44 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=4></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=5 ROWSPAN=2 WIDTH=80><INPUT TYPE="text" NAME="MCC"
VALUE="" SIZE=10 MAXLENGTH=10 ></TD>
        <TD COLSPAN=36 HEIGHT=2></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=4></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=12></TD>
        <TD COLSPAN=4 ROWSPAN=4 WIDTH=70>
<P><FONT>Billet MOS</FONT></TD>

        <TD COLSPAN=4></TD>
        <TD COLSPAN=14 ROWSPAN=3 WIDTH=238><SELECT NAME="SEPMOSNumber"
><OPTION VALUE="9602">9602</OPTION><OPTION VALUE="9620">(9620) Aero
Engineer</OPTION><OPTION VALUE="9624">(9624) Electrical Engineer</OPTION><OPTION
VALUE="9626">(9626) Combat Systems Science</OPTION><OPTION
VALUE="9628">9628</OPTION><OPTION VALUE="9630">9630</OPTION><OPTION
VALUE="9631">9631</OPTION><OPTION VALUE="9632">9632</OPTION><OPTION
VALUE="9634">(9634) Information Warfare</OPTION><OPTION VALUE="9640">(9640) Manpower
Systems Analysis</OPTION><OPTION VALUE="9644">(9644) Financial Mngmt</OPTION><OPTION
VALUE="9646">(9646) Computer Science</OPTION><OPTION VALUE="9648" SELECTED>(9648)
Information Technology Mgt</OPTION><OPTION VALUE="9650">(9650) Operations
Analysis</OPTION><OPTION VALUE="9652">(9652) Defense Systems Analysis</OPTION><OPTION
VALUE="9656">(9656) Contracting</OPTION><OPTION VALUE="9657">(9657) Systems Acqustion
Mgmt</OPTION><OPTION VALUE="9658">(9658) C3</OPTION><OPTION VALUE="9662">(9662)
Material Logistics Mgmt</OPTION><OPTION VALUE="9666">(9666) Space Systems
Ops</OPTION><OPTION VALUE="9670">(9670) Applied Math</OPTION><OPTION
VALUE="9674">9674</OPTION><OPTION VALUE="9676">(9676) National Security
Affair</OPTION></SELECT></TD>
        <TD COLSPAN=2 HEIGHT=20></TD>
```

```
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=4></TD>
        <TD COLSPAN=20></TD>
        <TD COLSPAN=4></TD>
        <TD COLSPAN=2 HEIGHT=2></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=29></TD>
        <TD COLSPAN=4></TD>
        <TD COLSPAN=2 HEIGHT=2></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=29></TD>
        <TD COLSPAN=20 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=20></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
        <TD COLSPAN=13 ROWSPAN=1 WIDTH=198>
<P><FONT SIZE="+1" FACE="Stencil"><U>SEP Billet Criteria</FONT></U></TD>

        <TD COLSPAN=39 HEIGHT=32></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=14></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=40></TD>
        <TD COLSPAN=3 ROWSPAN=4 WIDTH=82> <CFQUERY Name="selectenviron"
Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Environ Criteria Intensity].[Intensity], [Environ Criteria
Intensity].[EnvironWeight] FROM [Environ Criteria Intensity];
">
<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Environment Criteria Intensity</B>
<SELECT NAME="EnvironWeight">
<CFOUTPUT QUERY="selectenviron"><OPTION VALUE="#EnvironWeight#">
                        #Intensity#

                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=10 HEIGHT=3></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12></TD>
        <TD COLSPAN=4 ROWSPAN=4 WIDTH=79> <CFQUERY Name="selectjntstf"
Datasource="SEP Billet Validation"
```

```
        SQL="SELECT DISTINCTROW [Joint Criteria Intensity].[Intensity], [Joint Criteria
Intensity].[JSWeight] FROM [Joint Criteria Intensity];
">
<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Joint Criteria Intensity</B>
<SELECT NAME="JSWeight">
<CFOUTPUT QUERY="selectjntstf"><OPTION VALUE="#JSWeight#">
                        #Intensity#

                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=24></TD>
        <TD COLSPAN=10 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12></TD>
        <TD COLSPAN=6></TD>
        <TD COLSPAN=5 ROWSPAN=5 WIDTH=76> <CFQUERY Name="selectprograms"
Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Program Criteria Intensity].[Intensity], [Program Criteria
Intensity].[ProgWeight] FROM [Program Criteria Intensity];
">
<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Programs Criteria Intensity</B>
<SELECT NAME="ProgWeight">
<CFOUTPUT QUERY="selectprograms"><OPTION VALUE="#ProgWeight#">
                        #Intensity#

                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=13></TD>
        <TD COLSPAN=10 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12></TD>
        <TD COLSPAN=6></TD>
        <TD COLSPAN=3></TD>
        <TD COLSPAN=8 ROWSPAN=3 WIDTH=76> <CFQUERY Name="selectpolicy"
Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Policy Criteria Intensity].[Intensity], [Policy Criteria
Intensity].[PolicyWeight] FROM [Policy Criteria Intensity];
">
<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Policy Criteria Intensity</B>
<SELECT NAME="PolicyWeight">
<CFOUTPUT QUERY="selectpolicy"><OPTION VALUE="#PolicyWeight#">
                        #Intensity#
```

```
                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=2></TD>
        <TD COLSPAN=10 HEIGHT=22></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=9></TD>
        <TD COLSPAN=38 ROWSPAN=4 WIDTH=504 VALIGN="middle"> <HR width=504
NOSHADE="TRUE"></TD>
        <TD COLSPAN=6 HEIGHT=2></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=9></TD>
        <TD COLSPAN=6 HEIGHT=4></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=9></TD>
        <TD COLSPAN=6 HEIGHT=3></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=9></TD>
        <TD COLSPAN=6 HEIGHT=21></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=42></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=41></TD>
        <TD COLSPAN=3 ROWSPAN=3 WIDTH=76> <CFQUERY Name="selecteducator"
Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Educator Criteria Intensity].[Intensity], [Educator Criteria
Intensity].[EducatorWeight] FROM [Educator Criteria Intensity];
">

<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Educational Criteria Intensity</B>
                        <SELECT NAME="EducatorWeight">
                        <CFOUTPUT QUERY="selecteducator"><OPTION
VALUE="#EducatorWeight#">
                        #Intensity#

                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=9 HEIGHT=6></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12></TD>
```

```
        <TD COLSPAN=3 ROWSPAN=4 WIDTH=76> <CFQUERY Name="selectresearch"
Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Research Criteria Intensity].[Intensity], [Research Criteria
Intensity].[ResrchWeight] FROM [Research Criteria Intensity];
">

<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Research Criteria Intensity</B>
                        <SELECT NAME="ResrchWeight">
                        <CFOUTPUT QUERY="selectresearch"><OPTION
VALUE="#ResrchWeight#">
                        #Intensity#

                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=6></TD>
        <TD COLSPAN=5 ROWSPAN=5 WIDTH=76> <CFQUERY Name="selecttechskil"
Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [TechSkil Criteria Intensity].[Intensity], [TechSkil Criteria
Intensity].[TechSkilWeight] FROM [TechSkil Criteria Intensity];
">

<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Technical Criteria Intensity</B>
                        <SELECT NAME="TechSkilWeight">
                        <CFOUTPUT QUERY="selecttechskil"><OPTION
VALUE="#TechSkilWeight#">
                        #Intensity#

                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=15></TD>
        <TD COLSPAN=9 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12></TD>
        <TD COLSPAN=6></TD>
        <TD COLSPAN=6></TD>
        <TD COLSPAN=7 ROWSPAN=5 WIDTH=76> <CFQUERY Name="selectPMOS"
Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [PMOS Criteria Intensity].[Intensity], [PMOS Criteria
Intensity].[PMOSWeight] FROM [PMOS Criteria Intensity];
">

<FORM ACTION="billetinput.cfm" METHOD=POST>
<B>Primary MOS Intensity</B>
                        <SELECT NAME="PMOSWeight">
```

```
                        <CFOUTPUT QUERY="selectPMOS"><OPTION
VALUE="#PMOSWeight#">
                        #Intensity#

                        </CFOUTPUT>
                        </SELECT>
</TD>

        <TD COLSPAN=2></TD>
        <TD COLSPAN=9 HEIGHT=21></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12></TD>
        <TD COLSPAN=6></TD>
        <TD COLSPAN=6></TD>
        <TD COLSPAN=14 HEIGHT=3></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=8></TD>
        <TD COLSPAN=38 ROWSPAN=4 WIDTH=504 VALIGN="middle"> <HR width=504
NOSHADE="TRUE"></TD>
        <TD COLSPAN=7 HEIGHT=2></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=8></TD>
        <TD COLSPAN=7 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=8></TD>
        <TD COLSPAN=7 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=8></TD>
        <TD COLSPAN=7 HEIGHT=26></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=20></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=23></TD>
        <TD COLSPAN=8 ROWSPAN=1 WIDTH=102> <INPUT Type="Submit"
VALUE="Submit"></TD>

        <TD COLSPAN=22 HEIGHT=25></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=10></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=3></TD>
        <TD COLSPAN=47 ROWSPAN=1 WIDTH=636>
          <TABLE BORDER=0 CELLSPACING=0 CELLPADDING=3 >
```

```
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=100><A HREF="../index.html"><IMG HEIGHT=25
WIDTH=100 SRC="../assets/auto_generated_images/img_4d5ace67.gif"  BORDER=0  ALT=" Index "
></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_holder.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5aed08.gif"  BORDER=0
ALT=" Billet Holder " ></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_criteria.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5a99a3.gif"  BORDER=0
ALT=" Billet Criteria " ></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_score.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5a9cc4.gif"  BORDER=0
ALT=" Billet Scores " ></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/update_data.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5aa085.gif"  BORDER=0
ALT=" Update Data " ></A></TD>
                <TD COLSPAN=1 WIDTH=100 HEIGHT=25><A
HREF="../html/milestones.html"><IMG HEIGHT=25 WIDTH=100
SRC="../assets/auto_generated_images/img_4d5aa3a6.gif"  BORDER=0  ALT=" milestones "
></A></TD>
         </TR>
         </TABLE></TD>
        <TD COLSPAN=3 HEIGHT=31></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=52></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=53 HEIGHT=0></TD>
  </TR>
 </TABLE>
</FORM></BODY>
</HTML>
```

billetinput.cfm

```
<!---------------------------------------------------------------------
        This Cold Fusion Template is responsible for the entry of data into
   the database. It uses fields passed from the calling HTML page
   and inserts them into your database table. You can customize this
        template to improve the look or the behavior of your application.
---------------------------------------------------------------------->

<!---------------------------------------------------------------------
        This is the CFINSERT tag controlling the entry of data into the
        database table.
---------------------------------------------------------------------->

<CFINSERT DATASOURCE="SEP Billet Validation" TABLENAME="SEPBillet">

<!---------------------------------------------------------------------
        If you chose to forward the data using e-mail the code below would
```

```
        contain the CFMAIL tag responsible for generation of dynamic e-mail.
--------------------------------------------------------------------->



<HTML><BODY>
<HEAD><TITLE>Submission Successful</TITLE></HEAD>
<!----------------------------------------------------------------------
<CENTER><IMG SRC="dataentry.gif"></CENTER>
--------------------------------------------------------------------->

<BLOCKQUOTE><HR>
<CENTER><H1>Submission Processed Successfully</H1></CENTER>
<P>The information you supplied was entered successfully into the database.  <P>Thank You for using the
SEP Billet Validation System.</CENTER>
<HR></BLOCKQUOTE>

</BODY></HTML>
```

3. OUTPUTS

billet_criteria.html

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">

<HTML>
<HEAD>
<TITLE>Billet Criteria</TITLE>
<META CONTENT="NetObjects Fusion 2.0 for Windows" NAME="Generator">

<META NAME="Generator" CONTENT="NetObjects Fusion 2.0 for Windows">

</HEAD>

<BODY BACKGROUND="../assets/duplicate4/FredsBackground.gif" LINK="#660000"
VLINK="#996600" TEXT="#333333">

 <TABLE BORDER=0 CELLSPACING=0 CELLPADDING=0 WIDTH=1024><TR VALIGN="top"
ALIGN="left">
        <TD COLSPAN=1 WIDTH=10><IMG SRC="../assets/images/dot_clear.gif" WIDTH=10
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=116><IMG SRC="../assets/images/dot_clear.gif" WIDTH=116
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=3><IMG SRC="../assets/images/dot_clear.gif" WIDTH=3
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=79><IMG SRC="../assets/images/dot_clear.gif" WIDTH=79
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=18><IMG SRC="../assets/images/dot_clear.gif" WIDTH=18
HEIGHT=1 BORDER=0></TD>
```

```
        <TD COLSPAN=1 WIDTH=62><IMG SRC="../assets/images/dot_clear.gif" WIDTH=62
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=50><IMG SRC="../assets/images/dot_clear.gif" WIDTH=50
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=155><IMG SRC="../assets/images/dot_clear.gif" WIDTH=155
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=71><IMG SRC="../assets/images/dot_clear.gif" WIDTH=71
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=23><IMG SRC="../assets/images/dot_clear.gif" WIDTH=23
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=437><IMG SRC="../assets/images/dot_clear.gif" WIDTH=437
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=0><IMG SRC="../assets/images/dot_clear.gif" WIDTH=0
HEIGHT=1 BORDER=0></TD>
</TR>

  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12 HEIGHT=10></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=5></TD>
        <TD COLSPAN=4 ROWSPAN=2 WIDTH=338>
<P ALIGN="CENTER"><FONT COLOR="#FF0000" SIZE="+3" FACE="Brush Script
MT">&amp;nbsp;</FONT><FONT COLOR="#800000" SIZE="+3" FACE="Brush Script MT">Special
Education Program Billet Validation System</FONT></TD>

        <TD COLSPAN=3 HEIGHT=60></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
        <TD COLSPAN=3 ROWSPAN=2 WIDTH=198>
<P><FONT SIZE="+1" FACE="Stencil"><U>SEP Billet Criteria</FONT></U></TD>

        <TD COLSPAN=1></TD>
        <TD COLSPAN=3 HEIGHT=19></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
        <TD COLSPAN=8 HEIGHT=27></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12 HEIGHT=9></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=3></TD>
        <TD COLSPAN=7 ROWSPAN=1 WIDTH=458>
         <TABLE BORDER=1 CELLSPACING=3 CELLPADDING=1 >
         <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=162>
<P><B><FONT FACE="Arial,Helvetica">JNTSTAFF</B></FONT></TD>

                <TD COLSPAN=1 WIDTH=281 HEIGHT=44>
```

```
<P><FONT>interaction with allied, joint, congressional or high level staff</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=162>
<P><B><FONT FACE="Arial,Helvetica">RESEARCH</B></FONT></TD>

                <TD COLSPAN=1 WIDTH=281 HEIGHT=43>
<P><FONT>interaction with technical research laboratories</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=162>
<P><B><FONT FACE="Arial,Helvetica">ENVIRON</B></FONT></TD>

                <TD COLSPAN=1 WIDTH=281 HEIGHT=48>
<P><FONT>work in a rapidly changing environment</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=162>
<P><B><FONT FACE="Arial,Helvetica">PMOS</B></FONT></TD>

                <TD COLSPAN=1 WIDTH=281 HEIGHT=48>
<P><FONT>relevant to primary military occupation field</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=162>
<P><B><FONT FACE="Arial,Helvetica">PROGRAMS</B></FONT></TD>

                <TD COLSPAN=1 WIDTH=281 HEIGHT=50>
<P><FONT>development and fielding of new and technical programs</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=162>
<P><B><FONT FACE="Arial,Helvetica">EDUCATOR</FONT></B>:</TD>

                <TD COLSPAN=1 WIDTH=281 HEIGHT=63>
<P><FONT>instructor in academic institution requiring adv degree</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=162>
<P><B><FONT FACE="Arial,Helvetica">POLICY</B></FONT></TD>

                <TD COLSPAN=1 WIDTH=281 HEIGHT=50>
<P><FONT> think tank; development of new policies and initiatives</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
```

```
                <TD COLSPAN=1 WIDTH=162>
<P><B><FONT FACE="Arial,Helvetica">TECHSKIL</B></FONT></TD>

                <TD COLSPAN=1 WIDTH=281 HEIGHT=60>
<P><FONT> frequent use of technical skills &amp; knowledge in technical domain</FONT></TD>

        </TR>
         </TABLE></TD>
        <TD COLSPAN=2 HEIGHT=451></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12 HEIGHT=13></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=6></TD>
        <TD COLSPAN=2 ROWSPAN=1 WIDTH=205>
<P><A HREF="http://dnet8.sm.nps.navy.mil/cfdocs/testjavagrf.cfm"><B><I><FONT SIZE="+1">See a
graph of the weights</B></I></FONT></A><B><I><FONT SIZE="+1"></B></I></FONT></TD>

        <TD COLSPAN=4 HEIGHT=21></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12 HEIGHT=33></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=2></TD>
        <TD COLSPAN=5 ROWSPAN=1 WIDTH=212>
         <TABLE BORDER=0 CELLSPACING=0 CELLPADDING=3 >
         <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=100><A HREF="../index.html"><IMG HEIGHT=25
WIDTH=100 SRC="../assets/auto_generated_images/img_4d5ace67.gif"  BORDER=0  ALT=" Index "
></A></TD>
                <TD COLSPAN=1 WIDTH=100 HEIGHT=25><A
HREF="../html/criteria_weights.html"><IMG HEIGHT=25 WIDTH=100
SRC="../assets/auto_generated_images/img_4d5b2949.gif"  BORDER=0  ALT=" Criteria Weights "
></A></TD>
         </TR>
         </TABLE></TD>
        <TD COLSPAN=5 HEIGHT=31></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12 HEIGHT=360></TD>
 </TR>
 <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=12 HEIGHT=0></TD>
 </TR>
</TABLE></BODY>
</HTML>
```

criteria_weight.html

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
```

```
<HTML>
<HEAD>
<TITLE>Criteria Weights</TITLE>
<META NAME="Generator" CONTENT="NetObjects Fusion 2.0 for Windows">

</HEAD>

<BODY BACKGROUND="../assets/duplicate4/FredsBackground.gif" LINK="#660000"
VLINK="#996600" TEXT="#333333">

 <TABLE BORDER=0 CELLSPACING=0 CELLPADDING=0 WIDTH=990><TR VALIGN="top"
ALIGN="left">
        <TD COLSPAN=1 WIDTH=24><IMG SRC="../assets/images/dot_clear.gif" WIDTH=24
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=2><IMG SRC="../assets/images/dot_clear.gif" WIDTH=2
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=175><IMG SRC="../assets/images/dot_clear.gif" WIDTH=175
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=24><IMG SRC="../assets/images/dot_clear.gif" WIDTH=24
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=3><IMG SRC="../assets/images/dot_clear.gif" WIDTH=3
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=328><IMG SRC="../assets/images/dot_clear.gif" WIDTH=328
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=40><IMG SRC="../assets/images/dot_clear.gif" WIDTH=40
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=3><IMG SRC="../assets/images/dot_clear.gif" WIDTH=3
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=391><IMG SRC="../assets/images/dot_clear.gif" WIDTH=391
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=0><IMG SRC="../assets/images/dot_clear.gif" WIDTH=0
HEIGHT=1 BORDER=0></TD>
</TR>

  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=10 HEIGHT=51></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=5></TD>
        <TD COLSPAN=3 ROWSPAN=2 WIDTH=371 ALIGN="center" VALIGN="middle"><IMG
HEIGHT=304 WIDTH=371 SRC="../assets/images/Criteria_Chart1.gif"  BORDER=0  ALT="Picture"
></TD>
        <TD COLSPAN=2 HEIGHT=2></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
        <TD COLSPAN=2 ROWSPAN=3 WIDTH=177>
         <TABLE BORDER=1 CELLSPACING=3 CELLPADDING=1 >
         <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">JNTSTAFF</FONT></TD>
```

```
                <TD COLSPAN=1 WIDTH=81 HEIGHT=18>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">0.16460</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">DAILY 0.09984
FREQUENT 0.04187</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=57>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">INFRQUNT 0.01637
NEVER   0.00652  </FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier
New,Courier">RESEARCH</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=20>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">0.14723</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">SUPERVSR 0.08931
ROUTINE 0.03746</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=58>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">OCCASSNL 0.01464
NORESRCH 0.00583 </FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">ENVIRON </FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=21>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">0.07217</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">SAFETY  0.04546
HIGHVIS 0.01274</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=65>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">FISCAL  0.00796
CRITICAL 0.00601</FONT></TD>

        </TR>
```

```
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">PMOS  
</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=27>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">0.03554</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">RELEVANT 0.02207
SOMEWHAT 0.00828 </FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=55>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">MARGINAL 0.00359 
NA      0.00161</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">PROGRAMS
</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=26>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">0.17615</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">DIRECTOR 0.10294 
PM  0.04617 </FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=52>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">ASSTPM  0.01972
NOPROG  0.00732</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier
New,Courier">EDUCATOR</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=21>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">0.06559</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">FACULTY 0.03992
STAFF   0.01630</FONT></TD>
```

```
                <TD COLSPAN=1 WIDTH=81 HEIGHT=70>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">INTERACT 0.00665
NONACAD 0.00272</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">POLICY 
</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=22>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">0.13614</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">STRATEGY 0.08411
OPERATNL 0.03381</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=63>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">TACTICAL 0.01287
NOPOLICY 0.00535</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">TECHSKIL </FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=26>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">0.20257</FONT></TD>

        </TR>
        <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=81>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">HIPERISH 0.12866
LOPERISH 0.04899</FONT></TD>

                <TD COLSPAN=1 WIDTH=81 HEIGHT=54>
<P><FONT COLOR="#0000FF" SIZE="-1" FACE="Courier New,Courier">NOPERISH 0.01733
NONTECH 0.00759</FONT></TD>

        </TR>
         </TABLE></TD>
        <TD COLSPAN=2></TD>
        <TD COLSPAN=2 HEIGHT=302></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
        <TD COLSPAN=7 HEIGHT=7></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
```

```
        <TD COLSPAN=1></TD>
        <TD COLSPAN=3 ROWSPAN=2 WIDTH=371 ALIGN="center" VALIGN="middle"><IMG
HEIGHT=558 WIDTH=371 SRC="../assets/images/Intensity_Chart1.gif" BORDER=0 ALT="Picture"
></TD>
        <TD COLSPAN=3 HEIGHT=431></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=4></TD>
        <TD COLSPAN=3 HEIGHT=127></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=10 HEIGHT=30></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=2></TD>
        <TD COLSPAN=4 ROWSPAN=1 WIDTH=530>
          <TABLE BORDER=0 CELLSPACING=0 CELLPADDING=3 >
          <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=100><A HREF="../index.html"><IMG HEIGHT=25
WIDTH=100 SRC="../assets/auto_generated_images/img_4d5ace67.gif" BORDER=0 ALT=" Index "
></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_holder.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5a95e2.gif" BORDER=0
ALT=" Billet Holder " ></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_criteria.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5b6bca.gif" BORDER=0
ALT=" Billet Criteria " ></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_score.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5a9cc4.gif" BORDER=0
ALT=" Billet Scores " ></A></TD>
                <TD COLSPAN=1 WIDTH=100 HEIGHT=25><A
HREF="../html/update_data.html"><IMG HEIGHT=25 WIDTH=100
SRC="../assets/auto_generated_images/img_4d5aa085.gif" BORDER=0 ALT=" Update Data "
></A></TD>
          </TR>
          </TABLE></TD>
        <TD COLSPAN=4 HEIGHT=31></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=10 HEIGHT=133></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=10 HEIGHT=0></TD>
  </TR>
 </TABLE></BODY>
</HTML>
```

testjavagrf.cfm

```
<HTML><HEAD>
        <TITLE>Criteria Weights</TITLE>
</HEAD><BODY>
```

```
<!--- Query the database to get data --->
<CFQUERY NAME="GetCriteria" DATASOURCE="SEP Billet Validation"
        SQL="SELECT DISTINCTROW Criteria.Criteria, Criteria.[Criteria Weight]AS TotalWeights
FROM Criteria;">


<!--- Display The Graph --->
<APPLET CODE="BarChart.class" CODEBASE="/classes/CFGraphs/" WIDTH="450" HEIGHT="250">

<!--- Set required record set parameters --->
<CFOUTPUT>
<PARAM NAME="ChartData.Columns" VALUE="Items,Values,Colors">
<PARAM NAME="ChartData.Items" VALUE="#ValueList(GetCriteria.Criteria)#">
<PARAM NAME="ChartData.Values" VALUE="#ValueList(GetCriteria.TotalWeights)#">
<PARAM NAME="ChartData.Colors" VALUE="black,orange,pink,green,yellow,red,blue,white">
</CFOUTPUT>

<!--- Set the optional display parameters --->
<PARAM NAME="Title" VALUE="Criteria Weights">
<PARAM NAME="TitleFontName" VALUE="Arial">
<PARAM NAME="TitleFontHeight" VALUE="9">

<PARAM NAME="DebugInfoEnabled" VALUE="no">


<!--- Set the optional refresh parameters
<PARAM NAME="RefreshTime" VALUE="10">

<CFIF ParameterExists(CGI.HTTP_HOST)>
        <CFSET host = CGI.HTTP_HOST>
<CFELSE>
        <CFSET host = CGI.HOST>
</CFIF>

<CFOUTPUT>
<PARAM NAME="RefreshDataFromURL"
VALUE="http://#host#/cfdocs/examples/cfgraphs/SalesByContinent_Data.cfm">
</CFOUTPUT>
---------->

<!--- If the Browser does not support Java show the following information --->
<H1> Your Browser Does Not Support JAVA!</H1>

</APPLET>
</CENTER>

<HR>
</BODY>
</HTML>
```

billet_score.html

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">

<HTML>
<HEAD>
<TITLE>Billet Scores</TITLE>
<META CONTENT="NetObjects Fusion 2.0 for Windows" NAME="Generator">

<META NAME="Generator" CONTENT="NetObjects Fusion 2.0 for Windows">

</HEAD>

<BODY BACKGROUND="../assets/duplicate4/FredsBackground.gif" LINK="#660000"
VLINK="#996600" TEXT="#333333">

 <TABLE BORDER=0 CELLSPACING=0 CELLPADDING=0 WIDTH=1091><TR VALIGN="top"
ALIGN="left">
        <TD COLSPAN=1 WIDTH=50><IMG SRC="../assets/images/dot_clear.gif" WIDTH=50
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=26><IMG SRC="../assets/images/dot_clear.gif" WIDTH=26
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=50><IMG SRC="../assets/images/dot_clear.gif" WIDTH=50
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=1><IMG SRC="../assets/images/dot_clear.gif" WIDTH=1
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=73><IMG SRC="../assets/images/dot_clear.gif" WIDTH=73
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=24><IMG SRC="../assets/images/dot_clear.gif" WIDTH=24
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=27><IMG SRC="../assets/images/dot_clear.gif" WIDTH=27
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=66><IMG SRC="../assets/images/dot_clear.gif" WIDTH=66
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=41><IMG SRC="../assets/images/dot_clear.gif" WIDTH=41
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=174><IMG SRC="../assets/images/dot_clear.gif" WIDTH=174
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=53><IMG SRC="../assets/images/dot_clear.gif" WIDTH=53
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=21><IMG SRC="../assets/images/dot_clear.gif" WIDTH=21
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=15><IMG SRC="../assets/images/dot_clear.gif" WIDTH=15
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=105><IMG SRC="../assets/images/dot_clear.gif" WIDTH=105
HEIGHT=1 BORDER=0></TD>
        <TD COLSPAN=1 WIDTH=365><IMG SRC="../assets/images/dot_clear.gif" WIDTH=365
HEIGHT=1 BORDER=0></TD>
```

```
        <TD COLSPAN=1 WIDTH=0><IMG SRC="../assets/images/dot_clear.gif" WIDTH=0
HEIGHT=1 BORDER=0></TD>
</TR>

  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=16 HEIGHT=10></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=7></TD>
        <TD COLSPAN=4 ROWSPAN=2 WIDTH=334>
<P ALIGN="CENTER"><FONT COLOR="#FF0000" SIZE="+3" FACE="Brush Script
MT"> </FONT><FONT COLOR="#800000" SIZE="+3" FACE="Brush Script MT">Special
Education Program Billet Validation System</FONT></TD>

        <TD COLSPAN=5 HEIGHT=66></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
        <TD COLSPAN=4 ROWSPAN=3 WIDTH=150>
<P><FONT SIZE="+1" FACE="Stencil"><U>Billet Scores</FONT></U></TD>

        <TD COLSPAN=2></TD>
        <TD COLSPAN=5 HEIGHT=16></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
        <TD COLSPAN=11 HEIGHT=4></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=1></TD>
        <TD COLSPAN=1></TD>
        <TD COLSPAN=7 ROWSPAN=2 WIDTH=397>
         <TABLE BORDER=1 CELLSPACING=3 CELLPADDING=1 >
         <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=387 HEIGHT=114>
<P><B><FONT>"Submit for Billet Data"</FONT></B><FONT> allows you to view detailed data of all
the billets in the database.  <B>"Graph Billet Scores"</B> uses a java applet to graph billet scores
by Line Number giving a Relative Billet Score.  The Score is calculated by the summation of eight
weighted criteria entered by billet holders. Please allow three to four minutes for SQL processing
time.</FONT></TD>

         </TR>
         </TABLE></TD>
        <TD COLSPAN=3 HEIGHT=26></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=6></TD>
        <TD COLSPAN=3 HEIGHT=98></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=3></TD>
```

```
        <TD COLSPAN=11 ROWSPAN=1 WIDTH=600 ALIGN="center" VALIGN="middle"><IMG
HEIGHT=225 WIDTH=600 SRC="../assets/duplicate1/gs020000.gif"  BORDER=0  ALT="Picture"
></TD>
        <TD COLSPAN=2 HEIGHT=225></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=16 HEIGHT=9></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=9></TD>
        <TD COLSPAN=1 ROWSPAN=2 WIDTH=174>
         <TABLE BORDER=1 CELLSPACING=3 CELLPADDING=1 >
         <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=164 HEIGHT=25>
<P><A HREF="http://dnet8.sm.nps.navy.mil/cfdocs/SEPLogin2.cfm"><B><FONT SIZE="+1">Graph
Billet Scores</B></FONT></A><B><FONT SIZE="+1"></B></FONT></TD>

         </TR>
         </TABLE></TD>
        <TD COLSPAN=6 HEIGHT=1></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=4></TD>
        <TD COLSPAN=4 ROWSPAN=1 WIDTH=190>
         <TABLE BORDER=1 CELLSPACING=3 CELLPADDING=1 >
         <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=180 HEIGHT=24>
<P><A HREF="http://dnet8.sm.nps.navy.mil/cfdocs/SEPLogin.cfm"><B><FONT SIZE="+1">Submit for
Billet Data</B></FONT></A><B><FONT SIZE="+1"></B></FONT></TD>

         </TR>
         </TABLE></TD>
        <TD COLSPAN=1></TD>
        <TD COLSPAN=6 HEIGHT=34></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=16 HEIGHT=37></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
        <TD COLSPAN=2></TD>
        <TD COLSPAN=10 ROWSPAN=1 WIDTH=530>
         <TABLE BORDER=0 CELLSPACING=0 CELLPADDING=3 >
         <TR VALIGN="top" ALIGN="left">
                <TD COLSPAN=1 WIDTH=100><A HREF="../index.html"><IMG HEIGHT=25
WIDTH=100 SRC="../assets/auto_generated_images/img_4d5ace67.gif"  BORDER=0  ALT=" Index "
></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_holder.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5a95e2.gif"  BORDER=0
ALT=" Billet Holder " ></A></TD>
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_criteria.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5a99a3.gif"  BORDER=0
ALT=" Billet Criteria " ></A></TD>
```

```
                <TD COLSPAN=1 WIDTH=100><A HREF="../html/billet_score.html"><IMG
HEIGHT=25 WIDTH=100 SRC="../assets/auto_generated_images/img_4d5b9a4b.gif"  BORDER=0
ALT=" Billet Scores " ></A></TD>
                <TD COLSPAN=1 WIDTH=100 HEIGHT=25><A
HREF="../html/update_data.html"><IMG HEIGHT=25 WIDTH=100
SRC="../assets/auto_generated_images/img_4d5aa085.gif"  BORDER=0  ALT=" Update Data "
></A></TD>
          </TR>
           </TABLE></TD>
          <TD COLSPAN=4 HEIGHT=31></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
          <TD COLSPAN=16 HEIGHT=123></TD>
  </TR>
  <TR VALIGN="top" ALIGN="left">
          <TD COLSPAN=16 HEIGHT=0></TD>
  </TR>
 </TABLE></BODY>
</HTML>
```

seplogin.cfm

```
<HTML>
<HEAD><TITLE>SEP Billet Validation MOS Specialist Login</TITLE></HEAD>
<BODY BGCOLOR="#FFFFFF">


<H2>Please Login</H2>

<!---------------------------------------------------------------
          The below login form checks for the existence of Username and
          Password cookies and pre-fills then into the login form if
          it exists.
---------------------------------------------------------------->

<FORM ACTION="AuthenticateLogin.cfm" METHOD=POST>
<PRE>
   Username <INPUT TYPE="text" NAME="UserName"
                                        <CFIF #ParameterExists(Cookie.Username)# IS
"Yes">VALUE="<CFOUTPUT>#Cookie.Username#</CFOUTPUT>"</CFIF>>
   Password <INPUT TYPE="password" NAME="Password"
                                        <CFIF #ParameterExists(Cookie.Password)# IS
"Yes">VALUE="<CFOUTPUT>#Cookie.Password#</CFOUTPUT>"</CFIF>> <INPUT
TYPE="submit" VALUE="    Login    ">
</PRE>

<BLOCKQUOTE>
<I>
          To gain access, contact the system developers: Send mail to :</FONT><A
HREF="mailto:abornsch@nps.navy.mil,mjjernig@nps.navy.mil"> Capt Art Bornschein and Capt Mike
Jernigan</A> or Phone (408)656-3630 or DSN 878-3630 </I>
</BLOCKQUOTE>
```

```
</FORM>

</BODY>
</HTML>
```

authenticatelogin.cfm

```
<!---Billet Validation Security Template--->

<!-----------------------------------------------------------------
        This template recognizes the type of identification data that
        it receives and runs a query to validate the login.     In order to
        implement security in a template, simply CFINCLUDE this template
        at the top of your template.
------------------------------------------------------------------>

<!-----------------------------------------------------------------
        Check whether the Username and Password are from client cookies
        or whether they are coming from the login form.
------------------------------------------------------------------>

<CFIF #ParameterExists(FORM.UserName)# IS "YES" AND #ParameterExists(FORM.Password)# IS
"YES">
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users, Clients
                        WHEREUserName = '#FORM.Username#' AND
                                        Password= '#FORM.Password#'
        </CFQUERY>

        <DBCOOKIE NAME="Username" VALUE="#FORM.Username#" EXPIRES=1>
        <DBCOOKIE NAME="Password" VALUE="#FORM.Password#" EXPIRES=1>

<CFELSEIF #ParameterExists(Cookie.Username)# IS "YES" AND #ParameterExists(Cookie.Password)#
IS "YES">
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users
                        WHEREUserName = '#Cookie.Username#' AND
                                        Password= '#Cookie.Password#'
        </CFQUERY>

<CFELSE>
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users WHERE User_ID = 0
        </CFQUERY>
</CFIF>

<!-----------------------------------------------------------------
        Check whether user record was found. If not force a new login.
------------------------------------------------------------------>

<CFIF #GetUserRecord.RecordCount# IS NOT 0>
        <CFSET Client_ID = #GetUserRecord.Client_ID#>
```

```
<CENTER><BR><B>Welcome to the SEP Billet Database. Please continue with your
request.</B></BR><FORM ACTION="billetscore.cfm" METHOD=POST>

<INPUT TYPE="submit" VALUE="   Continue   ">
</FORM></CENTER>

<CFELSE>
        <CENTER>
        <B>Sorry, but could not validate your Username and Password.
        Please try again.</B>
        </CENTER>
        <DBINCLUDE TEMPLATE="SEPLogin.cfm">
        <CFABORT>
</CFIF>
```

billetscore.cfm

```
<!-----<CFINCLUDE TEMPLATE="AuthenticateLogin.cfm">----->
<!---billetscore.cfm is a query to retrieve and compute billet scores--->
<CFQUERY Name="billetscore" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [SEPBillet].[TblOrg], [SEPBillet].[Linenum], [Joint Criteria
Intensity].JSWeight, [Joint Criteria weight].[Criteria Weight], ([Joint Criteria Intensity].[JSWeight])*([Joint
Criteria weight].[Criteria Weight]) AS JointProd, [Program Criteria Intensity].ProgWeight, [Programs
Criteria weight].[Criteria Weight], ([Program Criteria Intensity].[ProgWeight])*([Programs Criteria
weight].[Criteria Weight]) AS ProgProd,
[JointProd]+[ProgProd]+[ResrchProd]+[PolicyProd]+[EnvironProd]+[PMOSProd]+[EducatorProd]+[Tech
SkilProd] AS [BilletScore], [Research Criteria Intensity].ResrchWeight, [Research Criteria
weight].[Criteria Weight], ([Research Criteria Intensity].[ResrchWeight])*([Research Criteria
weight].[Criteria Weight]) AS ResrchProd, [Policy Criteria Intensity].PolicyWeight, [Policy Criteria
weight].[Criteria Weight], ([Policy Criteria Intensity].[PolicyWeight])*([Policy Criteria weight].[Criteria
Weight]) AS PolicyProd, [Environ Criteria Intensity].EnvironWeight, [Environ Criteria weight].[Criteria
Weight], ([Environ Criteria Intensity].[EnvironWeight])*([Environ Criteria weight].[Criteria Weight]) AS
EnvironProd, [PMOS Criteria Intensity].PMOSWeight, [PMOS Criteria weight].[Criteria Weight], ([PMOS
Criteria Intensity].[PMOSWeight])*([PMOS Criteria weight].[Criteria Weight]) AS PMOSProd, [Educator
Criteria Intensity].EducatorWeight, [Educator Criteria weight].[Criteria Weight], ([Educator Criteria
Intensity].[EducatorWeight])*([Educator Criteria weight].[Criteria Weight]) AS EducatorProd, [TechSkil
Criteria Intensity].TechSkilWeight, [TechSkil Criteria weight].[Criteria Weight], ([TechSkil Criteria
Intensity].[TechSkilWeight])*([TechSkil Criteria weight].[Criteria Weight]) AS TechSkilProd
FROM [Joint Criteria weight], [Programs Criteria weight], [Research Criteria weight], [Policy Criteria
weight], [Environ Criteria weight], [PMOS Criteria weight], [Educator Criteria weight], [TechSkil Criteria
weight], [TechSkil Criteria Intensity] INNER JOIN ([Educator Criteria Intensity] INNER JOIN ([PMOS
Criteria Intensity] INNER JOIN ([Environ Criteria Intensity] INNER JOIN ([Policy Criteria Intensity]
INNER JOIN ([Research Criteria Intensity] INNER JOIN (Criteria INNER JOIN ([Program Criteria
Intensity] INNER JOIN ([Joint Criteria Intensity] INNER JOIN [SEPBillet] ON [Joint Criteria
Intensity].JSWeight = [SEPBillet].JSWeight) ON [Program Criteria Intensity].ProgWeight =
[SEPBillet].ProgWeight) ON (Criteria.Criteria = [Program Criteria Intensity].Criteria) AND (Criteria.[SEP
MOS] = [Program Criteria Intensity].[SEP MOS])) ON [Research Criteria Intensity].ResrchWeight =
[SEPBillet].ResrchWeight) ON [Policy Criteria Intensity].PolicyWeight = [SEPBillet].PolicyWeight) ON
[Environ Criteria Intensity].EnvironWeight = [SEPBillet].EnvironWeight) ON [PMOS Criteria
Intensity].PMOSWeight = [SEPBillet].PMOSWeight) ON [Educator Criteria Intensity].EducatorWeight =
```

```
[SEPBillet].EducatorWeight) ON [TechSkil Criteria Intensity].TechSkilWeight =
[SEPBillet].TechSkilWeight;
">

<HTML>
<HEAD>
<TITLE> Billet Score</TITLE>
</HEAD>
<BODY>
<PRE>

<B>ITM 9648 Notional Billet Score</B>

        <CFIF #billetscore.RecordCount# is 0>
  <P>
  <B>No billets were found.</B>

  <P>

<CFELSE>

<CFOUTPUT>
<P>The search located #billetscore.RecordCount# billets in the database.
<P>Select one billet at a time for which you would like more detailed information:<P>
</CFOUTPUT>

<FORM ACTION="moreinfo.cfm" METHOD=POST>


<!---------------------------------------------------------------------
        Display the list of training centers, embedding a check box in
   the first column which will allow the user to select multiple
   centers to get more detailed information on.
---------------------------------------------------------------------->

<CFTABLE Query="billetscore" COLHEADERS HEADERLINES=3>
 <CFCOL WIDTH=1
    TEXT="<INPUT Type=checkbox Name=billetscore Value='#Linenum#'>">
 <CFCOL Header="  <B>T/O</B>" WIDTH=40 TEXT="#TblOrg#">
 <CFCOL Header="  <B>Line number</B>" WIDTH=25 TEXT="#Linenum#">
 <CFCOL Header="  <B>Billet Score</B>" WIDTH=25 TEXT="#BilletScore#">
</CFTABLE>
 <BR>

<INPUT type="hidden" Name="billetscore_required"
   Value="You must select at least one billet.">
<INPUT type="submit" Value="  Retrieve Detailed Information  ">
</FORM>

</CFIF>

</PRE>
```

```
</BODY>
</HTML>
```

moreinfo.cfm

```
<!-- Get detailed info on the site -->

<CFQUERY NAME="BilletInfo" DATASOURCE="SEP Billet Validation"
        SQL="SELECT DISTINCTROW BilletHolder.*, [SEPBillet].*
FROM BilletHolder INNER JOIN [SEPBillet] ON BilletHolder.SSN = [SEPBillet].BilletHolderSSN_FK
WHERE ([SEPBillet].Linenum='#billetscore#') ;">

<HTML>

<HEAD>
<TITLE>Detailed Billet Information</TITLE>
</HEAD>
<BODY BGCOLOR="#FFFFFF">

<!------------------------ BANNER IMAGES <A HREF="BTS.cfm">
<IMG SRC="../images/BTS.gif" BORDER=0 ALIGN=Right></A>
<A HREF="../index.cfm"><IMG SRC="../images/Back.gif" BORDER=0 ALIGN=Right></A>
------------------------>

<H2>Detailed Billet Information</H2>

<!-----------------------------------------------------------------
        Show the sites information and generate a link to another
   template (COURSES.cfm) which will display all courses
   offered by the center
------------------------------------------------------------------>

<CFOUTPUT Query="BilletInfo">
<HR>
<H3>#Rank# #LastName#</H3>
<!---#Rank#<BR>--->
Billet MOS: #SEPMOSNumber#<BR>
Command Information: #Organization#, MCC:#MCC#, RUC: #RUC#<BR>
Contact: #email#<BR>
DSN Phone: #DSNPhone#, Commercial phone: #cmlphone#<P>
Send mail to: <A HREF="mailto:#email#"> #Rank# #LastName#</A>
<!-----[ <a href="courses.cfm?Center=#Center_ID#">View Course List</a> ]----->
<P>
</CFOUTPUT>
<P ALIGN="CENTER"><A HREF="/html/billet_score.html"><FONT>Return to initial output
page</FONT></A>
</BODY>
</HTML>
```

seplogin2.cfm

```
<HTML>
<HEAD><TITLE>SEP Billet Validation MOS Specialist Login</TITLE></HEAD>
<BODY BGCOLOR="#FFFFFF">


<H2>Please Login</H2>

<!-----------------------------------------------------------------
        The below login form checks for the existence of Username and
        Password cookies and pre-fills then into the login form if
        it exists.
------------------------------------------------------------------>

<FORM ACTION="AuthenticateLogin2.cfm" METHOD=POST>
<PRE>
   Username <INPUT TYPE="text" NAME="UserName"
                                        <CFIF #ParameterExists(Cookie.Username)# IS
"Yes">VALUE="<CFOUTPUT>#Cookie.Username#</CFOUTPUT>"</CFIF>>
   Password <INPUT TYPE="password" NAME="Password"
                                        <CFIF #ParameterExists(Cookie.Password)# IS
"Yes">VALUE="<CFOUTPUT>#Cookie.Password#</CFOUTPUT>"</CFIF>> <INPUT
TYPE="submit" VALUE="   Login   ">
</PRE>

<BLOCKQUOTE>
<I>
        To gain access, contact the system developers: Send mail to :</FONT><A
HREF="mailto:abornsch@nps.navy.mil,mjjernig@nps.navy.mil"> Capt Art Bornschein and Capt Mike
Jernigan</A> or Phone (408)656-3630 or DSN 878-3630 </I>
</BLOCKQUOTE>
</FORM>

</BODY>
</HTML>
```

authenticatelogin2.cfm

```
<!---Billet Validation Security Template--->

<!-----------------------------------------------------------------
        This template recognizes the type of identification data that
        it receives and runs a query to validate the login.      In order to
        implement security in a template, simply CFINCLUDE this template
        at the top of your template.
------------------------------------------------------------------>

<!-----------------------------------------------------------------
        Check whether the Username and Password are from client cookies
        or whether they are coming from the login form.
------------------------------------------------------------------>
```

```
<CFIF #ParameterExists(FORM.UserName)# IS "YES" AND #ParameterExists(FORM.Password)# IS
"YES">
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users, Clients
                        WHEREUserName = '#FORM.Username#' AND
                                        Password= '#FORM.Password#'
        </CFQUERY>

        <DBCOOKIE NAME="Username" VALUE="#FORM.Username#" EXPIRES=1>
        <DBCOOKIE NAME="Password" VALUE="#FORM.Password#" EXPIRES=1>

<CFELSEIF #ParameterExists(Cookie.Username)# IS "YES" AND #ParameterExists(Cookie.Password)#
IS "YES">
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users
                        WHEREUserName = '#Cookie.Username#' AND
                                        Password= '#Cookie.Password#'
        </CFQUERY>

<CFELSE>
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users WHERE User_ID = 0
        </CFQUERY>
</CFIF>

<!-----------------------------------------------------------------
        Check whether user record was found. If not force a new login.
------------------------------------------------------------------->

<CFIF #GetUserRecord.RecordCount# IS NOT 0>
        <CFSET Client_ID = #GetUserRecord.Client_ID#>

<CENTER><BR><B>Welcome to the SEP Billet Database.  Please continue with your
request.</B></BR><FORM ACTION="GraphScores.cfm" METHOD=POST>

<INPUT TYPE="submit" VALUE="   Continue   ">
</FORM></CENTER>

<CFELSE>
        <CENTER>
        <B>Sorry, but could not validate your Username and Password.
        Please try again.</B>
        </CENTER>
        <DBINCLUDE TEMPLATE="SEPLogin.cfm">
        <CFABORT>
</CFIF>
```

graphscores.cfm

```
<HTML><HEAD>
        <TITLE>Chart Scores</TITLE>
```

```
</HEAD><BODY>

<!-----<CFINCLUDE TEMPLATE="AuthenticateLogin.cfm">----->
<!--- Query the database to get data --->
<CFQUERY NAME="GraphScores" DATASOURCE="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [SEPBillet].[TblOrg], [SEPBillet].[Linenum], [Joint Criteria
Intensity].JSWeight, [Joint Criteria weight].[Criteria Weight], ([Joint Criteria Intensity].[JSWeight])*([Joint
Criteria weight].[Criteria Weight]) AS JointProd, [Program Criteria Intensity].ProgWeight, [Programs
Criteria weight].[Criteria Weight], ([Program Criteria Intensity].[ProgWeight])*([Programs Criteria
weight].[Criteria Weight]) AS ProgProd,
[JointProd]+[ProgProd]+[ResrchProd]+[PolicyProd]+[EnvironProd]+[PMOSProd]+[EducatorProd]+[Tech
SkilProd] AS [BilletScore], [Research Criteria Intensity].ResrchWeight, [Research Criteria
weight].[Criteria Weight], ([Research Criteria Intensity].[ResrchWeight])*([Research Criteria
weight].[Criteria Weight]) AS ResrchProd, [Policy Criteria Intensity].PolicyWeight, [Policy Criteria
weight].[Criteria Weight], ([Policy Criteria Intensity].[PolicyWeight])*([Policy Criteria weight].[Criteria
Weight]) AS PolicyProd, [Environ Criteria Intensity].EnvironWeight, [Environ Criteria weight].[Criteria
Weight], ([Environ Criteria Intensity].[EnvironWeight])*([Environ Criteria weight].[Criteria Weight]) AS
EnvironProd, [PMOS Criteria Intensity].PMOSWeight, [PMOS Criteria weight].[Criteria Weight], ([PMOS
Criteria Intensity].[PMOSWeight])*([PMOS Criteria weight].[Criteria Weight]) AS PMOSProd, [Educator
Criteria Intensity].EducatorWeight, [Educator Criteria weight].[Criteria Weight], ([Educator Criteria
Intensity].[EducatorWeight])*([Educator Criteria weight].[Criteria Weight]) AS EducatorProd, [TechSkil
Criteria Intensity].TechSkilWeight, [TechSkil Criteria weight].[Criteria Weight], ([TechSkil Criteria
Intensity].[TechSkilWeight])*([TechSkil Criteria weight].[Criteria Weight]) AS TechSkilProd
FROM [Joint Criteria weight], [Programs Criteria weight], [Research Criteria weight], [Policy Criteria
weight], [Environ Criteria weight], [PMOS Criteria weight], [Educator Criteria weight], [TechSkil Criteria
weight], [TechSkil Criteria Intensity] INNER JOIN ([Educator Criteria Intensity] INNER JOIN ([PMOS
Criteria Intensity] INNER JOIN ([Environ Criteria Intensity] INNER JOIN ([Policy Criteria Intensity]
INNER JOIN ([Research Criteria Intensity] INNER JOIN (Criteria INNER JOIN ([Program Criteria
Intensity] INNER JOIN ([Joint Criteria Intensity] INNER JOIN [SEPBillet] ON [Joint Criteria
Intensity].JSWeight = [SEPBillet].JSWeight) ON [Program Criteria Intensity].ProgWeight =
[SEPBillet].ProgWeight) ON (Criteria.Criteria = [Program Criteria Intensity].Criteria) AND (Criteria.[SEP
MOS] = [Program Criteria Intensity].[SEP MOS])) ON [Research Criteria Intensity].ResrchWeight =
[SEPBillet].ResrchWeight) ON [Policy Criteria Intensity].PolicyWeight = [SEPBillet].PolicyWeight) ON
[Environ Criteria Intensity].EnvironWeight = [SEPBillet].EnvironWeight) ON [PMOS Criteria
Intensity].PMOSWeight = [SEPBillet].PMOSWeight) ON [Educator Criteria Intensity].EducatorWeight =
[SEPBillet].EducatorWeight) ON [TechSkil Criteria Intensity].TechSkilWeight =
[SEPBillet].TechSkilWeight;">


<!--- Display The Graph --->
<APPLET CODE="BarChart.class" CODEBASE="/classes/CFGraphs/" WIDTH="450" HEIGHT="250">

<!--- Set required record set parameters --->
<CFOUTPUT>
<PARAM NAME="ChartData.Columns" VALUE="Items,Values,Colors">
<PARAM NAME="ChartData.Items" VALUE="#ValueList(GraphScores.Linenum)#">
<PARAM NAME="ChartData.Values" VALUE="#ValueList(GraphScores.BilletScore)#">
<PARAM NAME="ChartData.Colors" VALUE="black,yellow,blue,red,green">
</CFOUTPUT>

<!--- Set the optional display parameters --->
<PARAM NAME="Title" VALUE="Billet Scores by Line Number">
```

```
<PARAM NAME="TitleFontName" VALUE="Arial">
<PARAM NAME="TitleFontHeight" VALUE="9">

<PARAM NAME="DebugInfoEnabled" VALUE="no">


<!--- Set the optional refresh parameters
<PARAM NAME="RefreshTime" VALUE="10">

<CFIF ParameterExists(CGI.HTTP_HOST)>
        <CFSET host = CGI.HTTP_HOST>
<CFELSE>
        <CFSET host = CGI.HOST>
</CFIF>

<CFOUTPUT>
<PARAM NAME="RefreshDataFromURL"
VALUE="http://#host#/cfdocs/examples/cfgraphs/SalesByContinent_Data.cfm">
</CFOUTPUT>
---------->

<!--- If the Browser does not support Java show the following information --->
<H1> Your Browser Does Not Support JAVA!</H1>

</APPLET>
<P ALIGN="CENTER"><A HREF="/html/billet_score.html"><FONT>Return to initial output
page</FONT></A>
</CENTER>

<HR>
</BODY>
</HTML>
```

4. UPDATE ENTRY FORMS

getssn.cfm

```
<CFQUERY NAME="Billetholder" DATASOURCE="SEP Billet Validation"
        SQL="SELECT DISTINCTROW BilletHolder.SSN
FROM BilletHolder;">

<FORM ACTION="UpdateRecord.cfm" METHOD=POST>

<PRE><center><H2><B>Retrieve Your Information Using SSN or Unique ID</B></h2></center>
<center><INPUT TYPE="text" NAME="BilletHolder.SSN" SIZE=16 >
<INPUT TYPE="Submit" VALUE="   Get record  "></center>
</PRE>

</FORM>
```

updaterecord.cfm

```
 <CFQUERY NAME="Billetholder" DATASOURCE="SEP Billet Validation"
        SQL="SELECT DISTINCTROW BilletHolder.* FROM BilletHolder WHERE BilletHolder.SSN
= '#FORM.BilletHolder.SSN#';"
>

<FORM ACTION="ChangeHolderInfo.cfm?SSN=<cfoutput>#BilletHolder.SSN#</cfoutput>"
METHOD=POST>
<!----<INPUT TYPE="HIDDEN" NAME="SSN" VALUE='SSN'>---->

<CFOUTPUT QUERY="BilletHolder">
<PRE><center><H2><B>Billet Holder Information Contained in the Database:</B></h2></center>

<B> First Name</B>: <INPUT TYPE="text" NAME="FirstName" VALUE="#FirstName#">
<B> Last Name</B>: <INPUT TYPE="text" NAME="LastName" VALUE="#LastName#">
<B> Rank</B>: <INPUT TYPE="text" NAME="Rank" VALUE="#Rank#">
<B> Your SEP MOS</B>: <INPUT TYPE="text" NAME="SEPMOSNumber"
VALUE="#SEPMOSNumber#">
<B> E-mail</B>: <INPUT TYPE="text" NAME="email" VALUE="#email#">
<B> Commercial Phone Number</B>: <INPUT TYPE="text" NAME="cmlphone"
VALUE="#cmlphone#">
<B> DSN Phone Number</B>: <INPUT TYPE="text" NAME="DSNphone" VALUE="#DSNphone#">

</PRE>

<center><INPUT TYPE="Submit" VALUE="   Update Info  "></center>

</FORM>


</CFOUTPUT>
```

changeholderinfo.cfm

```
<CFQUERY NAME="UpdateHolderInfo" DATASOURCE="SEP Billet Validation"
        SQL="UPDATE DISTINCTROW BilletHolder SET FirstName = '#FirstName#',
LastName = '#LastName#',
Rank = '#Rank#',
SEPMOSNumber = '#SEPMOSNumber#',
cmlphone = '#cmlphone#',
DSNphone = '#DSNphone#',
email = '#email#'
WHERE SSN = '#SSN#';">

<CFQUERY NAME="Billetholder" DATASOURCE="SEP Billet Validation"
        SQL="SELECT DISTINCTROW BilletHolder.* FROM BilletHolder WHERE SSN = '#SSN#';">

<H2>The Database Entry Updated:</H2>

<CFOUTPUT QUERY="Billetholder">
```

```
<PRE>
<B> First Name</B>: #FirstName#
<B> Last Name</B>: #LastName#
<B> Rank</B>: #Rank#
<B> Your SEP MOS</B>: #SEPMOSNumber#
<B> E-mail</B>: #email#
<B> Commercial Phone Number</B>: #cmlphone#
<B> DSN Phone Number</B>: #DSNphone#
</PRE>
</CFOUTPUT>
```

seplogin3.cfm

```
<HTML>
<HEAD><TITLE>SEP Billet Validation MOS Specialist Login</TITLE></HEAD>
<BODY BGCOLOR="#FFFFFF">


<H2>Please Login</H2>

<!-------------------------------------------------------------
        The below login form checks for the existence of Username and
        Password cookies and pre-fills then into the login form if
        it exists.
-------------------------------------------------------------->

<FORM ACTION="AuthenticateLogin3.cfm" METHOD=POST>
<PRE>
   Username <INPUT TYPE="text" NAME="UserName"
                                        <CFIF #ParameterExists(Cookie.Username)# IS
"Yes">VALUE="<CFOUTPUT>#Cookie.Username#</CFOUTPUT>"</CFIF>>
   Password <INPUT TYPE="password" NAME="Password"
                                        <CFIF #ParameterExists(Cookie.Password)# IS
"Yes">VALUE="<CFOUTPUT>#Cookie.Password#</CFOUTPUT>"</CFIF>> <INPUT
TYPE="submit" VALUE="   Login   ">
</PRE>

<BLOCKQUOTE>
<I>
        To gain access, contact the system developers: Send mail to :</FONT><A
HREF="mailto:abornsch@nps.navy.mil,mjjernig@nps.navy.mil"> Capt Art Bornschein and Capt Mike
Jernigan</A> or Phone (408)656-3630 or DSN 878-3630 </I>
</BLOCKQUOTE>
</FORM>

</BODY>
</HTML>
```

authenticatelogin3.cfm

```
<!---Billet Validation Security Template--->
```

```
<!-------------------------------------------------------------
        This template recognizes the type of identification data that
        it receives and runs a query to validate the login.      In order to
        implement security in a template, simply CFINCLUDE this template
        at the top of your template.
-------------------------------------------------------------->

<!-------------------------------------------------------------
        Check whether the Username and Password are from client cookies
        or whether they are coming from the login form.
-------------------------------------------------------------->

<CFIF #ParameterExists(FORM.UserName)# IS "YES" AND #ParameterExists(FORM.Password)# IS
"YES">
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users, Clients
                        WHEREUserName = '#FORM.Username#' AND
                                        Password= '#FORM.Password#'
        </CFQUERY>

        <DBCOOKIE NAME="Username" VALUE="#FORM.Username#" EXPIRES=1>
        <DBCOOKIE NAME="Password" VALUE="#FORM.Password#" EXPIRES=1>

<CFELSEIF #ParameterExists(Cookie.Username)# IS "YES" AND #ParameterExists(Cookie.Password)#
IS "YES">
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users
                        WHEREUserName = '#Cookie.Username#' AND
                                        Password= '#Cookie.Password#'
        </CFQUERY>

<CFELSE>
        <CFQUERY NAME="GetUserRecord" DATASOURCE="SEP Billet Validation">
                SELECT * FROM Users WHERE User_ID = 0
        </CFQUERY>
</CFIF>

<!-------------------------------------------------------------
        Check whether user record was found. If not force a new login.
-------------------------------------------------------------->

<CFIF #GetUserRecord.RecordCount# IS NOT 0>
        <CFSET Client_ID = #GetUserRecord.Client_ID#>

<CENTER><BR><B>Welcome to the SEP Billet Database.  Please continue with your
request.</B></BR><FORM ACTION="getTOLinenum.cfm" METHOD=POST>

<INPUT TYPE="submit" VALUE="   Continue   ">
</FORM></CENTER>

<CFELSE>
```

```
        <CENTER>
        <B>Sorry, but could not validate your Username and Password.
        Please try again.</B>
        </CENTER>
        <DBINCLUDE TEMPLATE="SEPLogin.cfm">
        <CFABORT>
</CFIF>
```

getTOLinenum.cfm

```
<CFQUERY NAME="BilletInfo" DATASOURCE="SEP Billet Validation"
        SQL="SELECT [SEPBillet].TblOrg, [SEPBillet].Linenum
FROM [SEPBillet];">

<FORM ACTION="Updatebillet.cfm" METHOD=POST>

<PRE>
<center><H2><B>Retrieve Billet Using T/O and Line Number</B></h2></center>
Table of Organization <INPUT TYPE="text" NAME="SEPBillet.TblOrg" SIZE=15 >
Line Number         <INPUT TYPE="text" NAME="SEPBillet.Linenum" SIZE=15 >
<center><INPUT TYPE="Submit" VALUE="    Get record   "></center>
</PRE>

</FORM>
```

updatebillet.cfm

```
<!---------------------------------------------
This query is to retrieve the data from the database based on user entries (parameteres) from the previous
screen
---------------------------------------------->

<CFQUERY NAME="BilletInfo" DATASOURCE="SEP Billet Validation"
        SQL="SELECT DISTINCTROW SEPBillet.* FROM SEPBillet
WHERE (((SEPBillet.TblOrg)= '#Form.SEPBillet.TblOrg#' ) AND ((SEPBillet.Linenum)=
'#Form.SEPBillet.Linenum#'));">

<!---------------------------------------------
These queries are to retrieve the data for the criteria intensity pull down menus
---------------------------------------------->

<CFQUERY Name="selectenviron" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Environ Criteria Intensity].[Intensity], [Environ Criteria
Intensity].[EnvironWeight] FROM [Environ Criteria Intensity];">


<CFQUERY Name="selectjntstf" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Joint Criteria Intensity].[Intensity], [Joint Criteria
Intensity].[JSWeight] FROM [Joint Criteria Intensity];">

<CFQUERY Name="selectprograms" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Program Criteria Intensity].[Intensity], [Program Criteria
Intensity].[ProgWeight] FROM [Program Criteria Intensity];">
```

```
<CFQUERY Name="selectresearch" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Research Criteria Intensity].[Intensity], [Research Criteria
Intensity].[ResrchWeight] FROM [Research Criteria Intensity];">

<CFQUERY Name="selecttechskil" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [TechSkil Criteria Intensity].[Intensity], [TechSkil Criteria
Intensity].[TechSkilWeight] FROM [TechSkil Criteria Intensity];">

<CFQUERY Name="selectpolicy" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Policy Criteria Intensity].[Intensity], [Policy Criteria
Intensity].[PolicyWeight] FROM [Policy Criteria Intensity];">

<CFQUERY Name="selectPMOS" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [PMOS Criteria Intensity].[Intensity], [PMOS Criteria
Intensity].[PMOSWeight] FROM [PMOS Criteria Intensity];">

<CFQUERY Name="selecteducator" Datasource="SEP Billet Validation"
        SQL="SELECT DISTINCTROW [Educator Criteria Intensity].[Intensity], [Educator Criteria
Intensity].[EducatorWeight] FROM [Educator Criteria Intensity];">




<!----------------------------------------
This section displays the current intensity weights that exist in the database
---------------------------------------->
<Table><caption></caption><center><H2><B>Update Billet Data Table</B></h2></center>



<!----------------------------------------
This section begins the form fields to be updated by the user
---------------------------------------->

<FORM
ACTION="ChangeBilletInfo.cfm?TblOrg=<cfoutput>#BilletInfo.TblOrg#</cfoutput>&Linenum=<cfoutpu
t>#BilletInfo.Linenum#</cfoutput>" METHOD=POST>

<!----------------------------------------
This section outputs the text based fields in the database
---------------------------------------->


<CFOUTPUT QUERY="BilletInfo">
<TR><TD colspan=2 align=right>

<B> Organization</B>: </td><TD colspan=2 align=left>
<INPUT TYPE="text" NAME="Organization" VALUE="#Organization#"> </td></tr>
```

```
<TR><TD colspan=2 align=right><B> MCC</B>: </td><TD colspan=2 align=left><INPUT TYPE="text"
NAME="MCC" VALUE="#MCC#"></td></tr>

<TR><TD colspan=2 align=right><B> RUC</B>: </td><TD colspan=2 align=left><INPUT TYPE="text"
NAME="RUC" VALUE="#RUC#"></td></tr>

<TR><TD colspan=2 align=right><B> Billet MOS</B>: </td><TD colspan=2 align=left><INPUT
TYPE="text" NAME="SEPMOSNumber" VALUE="#SEPMOSNumber#"></td></tr>

<TR><TD colspan=2 align=right><B> Billet Title</B>: </td><TD colspan=2 align=left><INPUT
TYPE="text" NAME="BilletTitle" VALUE="#BilletTitle#"></td></tr>

</CFOUTPUT>

<!---------------------------------------
This section outputs pull down menu options for the user to update criteria data
--------------------------------------->

<TR><TD align=right><B>Environment Intensity</B>: </td><TD align=left>
<SELECT NAME="EnvironWeight">
<CFOUTPUT QUERY="selectenviron">
<CFIF #selectenviron.EnvironWeight# contains #BilletInfo.EnvironWeight#>

<OPTION VALUE="#EnvironWeight#" selected> #Intensity#,#EnvironWeight#
<CFELSE>
        <OPTION VALUE="#EnvironWeight#"> #Intensity#,#EnvironWeight#
</CFIF>

                        </CFOUTPUT>
                        </SELECT>
</td><TD align=right><B>Joint Staff Intensity</B>: </td><TD align=left>
<SELECT NAME="JSWeight">
<CFOUTPUT QUERY="selectjntstf">
<CFIF #selectjntstf.JSWeight# contains #BilletInfo.JSWeight#>
<OPTION VALUE="#JSWeight#" selected>#Intensity#, #JSWeight#
<CFELSE>
        <OPTION VALUE="#JSWeight#"> #Intensity#,#JSWeight#
</CFIF>

                        </CFOUTPUT>
                        </SELECT></td></tr>

<TR><TD align=right><B>Programs Intensity</B>: </td><TD align=left>
<SELECT NAME="ProgWeight">
<CFOUTPUT QUERY="selectprograms">
<CFIF #selectprograms.ProgWeight# contains #BilletInfo.ProgWeight#>

<OPTION VALUE="#ProgWeight#" selected>#Intensity#,#ProgWeight#
<CFELSE>
        <OPTION VALUE="#ProgWeight#"> #Intensity#,#ProgWeight#
</CFIF>
```

```
                        </CFOUTPUT>
                        </SELECT>
</td><TD align=right><B>Research Intensity</B>: </td><TD align=left>
<SELECT NAME="ResrchWeight">
<CFOUTPUT QUERY="selectresearch">
<CFIF #selectresearch.ResrchWeight# contains #BilletInfo.ResrchWeight#>

<OPTION VALUE="#ResrchWeight#" selected>     #Intensity#, #ResrchWeight#
<CFELSE>
        <OPTION VALUE="#ResrchWeight#"> #Intensity#,#ResrchWeight#
</CFIF>

                        </CFOUTPUT>
                        </SELECT></td></tr>

<TR><TD align=right><B>Technical Skill Intensity</B>: </td><TD align=left>
<SELECT NAME="TechSkilWeight">
<CFOUTPUT QUERY="selecttechskil">
<CFIF #selecttechskil.TechSkilWeight# contains #BilletInfo.TechSkilWeight#>
<OPTION VALUE="#TechSkilWeight#" selected> #Intensity#,#TechSkilWeight#
<CFELSE>
        <OPTION VALUE="#TechSkilWeight#"> #Intensity#,#TechSkilWeight#
</CFIF>

                        </CFOUTPUT>
                        </SELECT>
</td><TD align=right><B>Policy Intensity</B>: </td><TD align=left>
<SELECT NAME="PolicyWeight">
<CFOUTPUT QUERY="selectpolicy">
<CFIF #selectpolicy.PolicyWeight# contains #BilletInfo.PolicyWeight#>

<OPTION VALUE="#PolicyWeight#" selected> #Intensity#,#PolicyWeight#
<CFELSE>
        <OPTION VALUE="#PolicyWeight#"> #Intensity#,#PolicyWeight#
</CFIF>

                        </CFOUTPUT>
                        </SELECT></td></tr>

<TR><TD align=right><B>PMOS Intensity</B>: </td><TD align=left>
<SELECT NAME="PMOSWeight">
<CFOUTPUT QUERY="selectPMOS">
<CFIF #selectPMOS.PMOSWeight# contains #BilletInfo.PMOSWeight#>

<OPTION VALUE="#PMOSWeight#" selected>     #Intensity#,#PMOSWeight#
<CFELSE>
        <OPTION VALUE="#PMOSWeight#"> #Intensity#,#PMOSWeight#
</CFIF>

                        </CFOUTPUT>
                        </SELECT>
</td><TD align=right><B>Educator Intensity</B>: </td><TD align=left>
```

```
<SELECT NAME="EducatorWeight">
<CFOUTPUT QUERY="selecteducator">
<CFIF #selecteducator.EducatorWeight# contains #BilletInfo.EducatorWeight#>

<OPTION VALUE="#EducatorWeight#" selected>#Intensity#, #EducatorWeight#
<CFELSE>
        <OPTION VALUE="#EducatorWeight#"> #Intensity#,#EducatorWeight#
</CFIF>


                        </CFOUTPUT>
                        </SELECT></td></tr>



</TABLE>

<center><INPUT TYPE="Submit" VALUE="   Update Info   "></center>

</FORM>
```

changebilletinfo.cfm

```
<CFQUERY NAME="UpdateBilletInfo" DATASOURCE="SEP Billet Validation"
        SQL="UPDATE DISTINCTROW SEPBillet
SET Organization = '#Organization#',
MCC = '#MCC#',
RUC = '#RUC#',
SEPMOSNumber= '#SEPMOSNumber#',
BilletTitle = '#BilletTitle#',
EnvironWeight = '#EnvironWeight#',
JSWeight = '#JSWeight#',
ProgWeight = '#ProgWeight#',
ResrchWeight = '#ResrchWeight#',
TechSkilWeight = '#TechSkilWeight#',
PolicyWeight = '#PolicyWeight#',
PMOSWeight = '#PMOSWeight#',
EducatorWeight = '#EducatorWeight#'

WHERE (((SEPBillet.TblOrg)= '#TblOrg#' ) AND ((SEPBillet.Linenum)= '#Linenum#'));">

<CFQUERY NAME="BilletData" DATASOURCE="SEP Billet Validation"
        SQL="SELECT DISTINCTROW SEPBillet.* FROM SEPBillet WHERE (((SEPBillet.TblOrg)=
'#TblOrg#' ) AND ((SEPBillet.Linenum)= '#Linenum#'));">

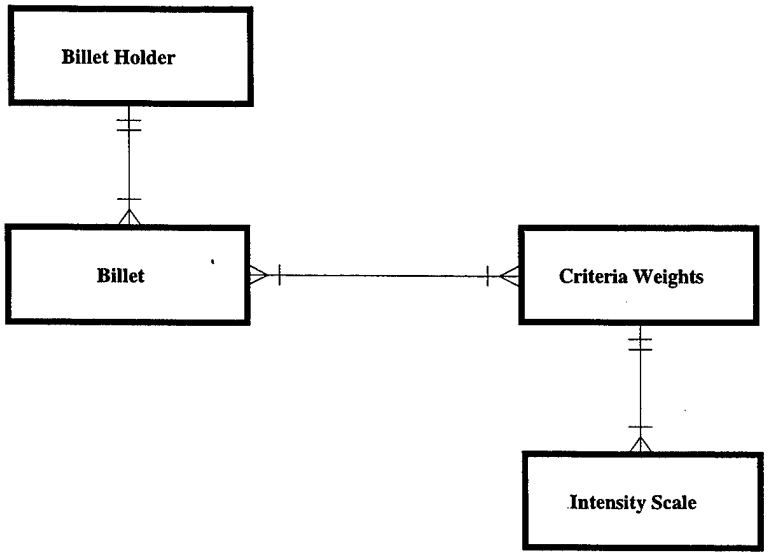

<H2>The Database Entry Updated:</H2>
```

```
<CFOUTPUT QUERY="BilletData">
<PRE>
<B> Organization</B>: #Organization#
<B> MCC</B>: #MCC#
<B> RUC</B>: #RUC#
<B> Billet MOS</B>: #SEPMOSNumber#
<B> Billet Title</B>: #BilletTitle#
<B> Environment Intensity</B>: = #EnvironWeight#
<B> Joint Staff Intensity</B>:  = #JSWeight#
<B> Program Intensity</B>:  = #ProgWeight#
<B> Research Intensity</B>:  = #ResrchWeight#
<B> Technical Skill Intensity</B>:  = #TechSkilWeight#
<B> Policy Intensity</B>:  = #PolicyWeight#
<B> PMOS Intensity</B>:  = #PMOSWeight#
<B> Educator Intensity</B>:  = #EducatorWeight#

</PRE>
</CFOUTPUT>
```

APPENDIX D: DATABASE SCHEMA

Entity-Relationship Diagram



TABLES

Wednesday, January 14, 1998

Table: BilletHolder

Columns

Name	Type	Size
SSN	Text	50
FirstName	Text	50
LastName	Text	50
Rank	Text	50
SEPMOSNumber	Text	50
email	Text	50
cmlphone	Text	50
DSNphone	Text	50

Relationships

BilletHolderSEPBillet

BilletHolder		SEPBillet
SSN	1 ∞	BilletHolderSSN_FK

Attributes:	Enforced
Attributes:	One-To-Many

Table Indexes

Name	Number of Fields
PrimaryKey	1
Clustered:	False
Distinct Count:	34
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True

Required:	True
Unique:	True
Fields:	SSN, Ascending

Wednesday, January 14, 1998

Table: Criteria

Columns

Name	Type	Size
SEP MOS	Text	50
Criteria	Text	50
Criteria Weight	Number (Double)	8

Table Indexes

Name	Number of Fields
CriteriaSEP MOS	1
Clustered:	False
Distinct Count:	1
Foreign:	False
Ignore Nulls:	False
Name:	CriteriaSEP MOS
Primary:	False
Required:	False
Unique:	False
Fields:	SEP MOS, Ascending
PrimaryKey	2
Clustered:	False
Distinct Count:	2
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	SEP MOS, Ascending
Fields:	Criteria, Ascending

Wednesday, January 14, 1998

Table: Educator Criteria Intensity

Columns

Name	Type	Size
Criteria	Text	50

SEP MOS	Text	50
Intensity	Text	50
EducatorWeight	Number (Double)	8

Relationships

Educator Criteria IntensitySEPBillet

Educator Criteria	SEPBillet
EducatorWeight	EducatorWeight

Attributes: Not Enforced
Attributes: Indeterminate

Table Indexes

Name — Number of Fields

Criteria IntensitySEP MOS — 1
- Clustered: False
- Distinct Count: 1
- Foreign: False
- Ignore Nulls: False
- Name: Criteria IntensitySEP MOS
- Primary: False
- Required: False
- Unique: False
- Fields: SEP MOS, Ascending

Intensity — 1
- Clustered: False
- Distinct Count: 4
- Foreign: False
- Ignore Nulls: False
- Name: Intensity
- Primary: False
- Required: False
- Unique: False
- Fields: Intensity, Ascending

PrimaryKey — 3
- Clustered: False
- Distinct Count: 4
- Foreign: False
- Ignore Nulls: False
- Name: PrimaryKey
- Primary: True
- Required: True
- Unique: True
- Fields: Criteria, Ascending
- Fields: SEP MOS, Ascending
- Fields: Intensity, Ascending

ProgWeight	1
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	ProgWeight
Primary:	False
Required:	False
Unique:	False
Fields:	EducatorWeight, Ascending

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Table: Environ Criteria Intensity

Columns

Name	Type	Size
Criteria	Text	50
SEP MOS	Text	50
Intensity	Text	50
EnvironWeight	Number (Double)	8

Relationships

Environ Criteria IntensitySEPBillet

Environ Criteria	SEPBillet
EnvironWeight	EnvironWeight

Attributes:	Not Enforced
Attributes:	Indeterminate

Table Indexes

Name	Number of Fields
Criteria IntensitySEP MOS	1
Clustered:	False
Distinct Count:	1
Foreign:	False
Ignore Nulls:	False
Name:	Criteria IntensitySEP MOS

Primary:	False
Required:	False
Unique:	False
Fields:	SEP MOS, Ascending
Intensity	1
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	Intensity
Primary:	False
Required:	False
Unique:	False
Fields:	Intensity, Ascending
PrimaryKey	3
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	Criteria, Ascending
Fields:	SEP MOS, Ascending
Fields:	Intensity, Ascending
ProgWeight	1
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	ProgWeight
Primary:	False
Required:	False
Unique:	False
Fields:	EnvironWeight, Ascending

Table: EnvironCriteriaIntensity

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Columns

Name	Type	Size
Criteria	Text	50
SEP MOS	Text	50
Intensity	Text	50
EnvironWeight	Number (Double)	8

Relationships

EnvironCriteriaIntensitySEPBillet

EnvironCriteriaIntensity	SEPBillet
EnvironWeight	EnvironWeight

Attributes:	Not Enforced
Attributes:	Indeterminate

Table Indexes

Name	Number of Fields
Criteria IntensitySEP MOS	1
Clustered:	False
Distinct Count:	1
Foreign:	False
Ignore Nulls:	False
Name:	Criteria IntensitySEP MOS
Primary:	False
Required:	False
Unique:	False
Fields:	SEP MOS, Ascending
Intensity	1
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	Intensity
Primary:	False
Required:	False
Unique:	False
Fields:	Intensity, Ascending
PrimaryKey	3
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	Criteria, Ascending
Fields:	SEP MOS, Ascending
Fields:	Intensity, Ascending
ProgWeight	1
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	ProgWeight
Primary:	False
Required:	False
Unique:	False
Fields:	EnvironWeight, Ascending

Table: Joint Criteria Intensity

Columns

Name	Type	Size
Criteria	Text	50
SEP MOS	Text	50
Intensity	Text	50
JSWeight	Number (Double)	8

Relationships

Joint Criteria IntensitySEPBillet

Joint Criteria Intensity	SEPBillet
JSWeight	JSWeight

Attributes: Not Enforced
Attributes: Indeterminate

Table Indexes

Name	Number of Fields
Criteria IntensitySEP MOS	1

Clustered: False
Distinct Count: 0
Foreign: False
Ignore Nulls: False
Name: Criteria IntensitySEP MOS
Primary: False
Required: False
Unique: False
Fields: SEP MOS, Ascending

Intensity — 1

Clustered: False
Distinct Count: 4
Foreign: False
Ignore Nulls: False
Name: Intensity
Primary: False
Required: False
Unique: False
Fields: Intensity, Ascending

JSWeight — 1

Clustered: False
Distinct Count: 0

Foreign:	False
Ignore Nulls:	False
Name:	JSWeight
Primary:	False
Required:	False
Unique:	False
Fields:	JSWeight, Ascending
PrimaryKey	3
Clustered:	False
Distinct Count:	1
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	Criteria, Ascending
Fields:	SEP MOS, Ascending
Fields:	Intensity, Ascending

Table: PMOS Criteria Intensity

Columns

Name	Type	Size
Criteria	Text	50
SEP MOS	Text	50
Intensity	Text	50
PMOSWeight	Number (Double)	8

Relationships

PMOS Criteria IntensitySEPBillet

PMOS Criteria Intensity	SEPBillet
PMOSWeight	PMOSWeight

Attributes:	Not Enforced
Attributes:	Indeterminate

Table Indexes

Name	Number of Fields
Criteria IntensitySEP MOS	1
Clustered:	False
Distinct Count:	1
Foreign:	False

	Ignore Nulls:	False
	Name:	Criteria IntensitySEP MOS
	Primary:	False
	Required:	False
	Unique:	False
	Fields:	SEP MOS, Ascending
Intensity		1
	Clustered:	False
	Distinct Count:	4
	Foreign:	False
	Ignore Nulls:	False
	Name:	Intensity
	Primary:	False
	Required:	False
	Unique:	False
	Fields:	Intensity, Ascending
PrimaryKey		3
	Clustered:	False
	Distinct Count:	4

Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	Criteria, Ascending
Fields:	SEP MOS, Ascending
Fields:	Intensity, Ascending

ProgWeight 1

Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	ProgWeight
Primary:	False
Required:	False
Unique:	False
Fields:	PMOSWeight, Ascending

Table: Policy Criteria Intensity

Columns

Name	Type	Size
Criteria	Text	50
SEP MOS	Text	50
Intensity	Text	50
PolicyWeight	Number (Double)	8

Relationships

Policy Criteria IntensitySEPBillet

Policy Criteria Intensity	SEPBillet
PolicyWeight	PolicyWeight

Attributes:	Not Enforced
Attributes:	Indeterminate

Table Indexes

Name	Number of Fields
Criteria IntensitySEP MOS	1
Clustered:	False
Distinct Count:	1

	Foreign:	False
	Ignore Nulls:	False
	Name:	Criteria IntensitySEP MOS
	Primary:	False
	Required:	False
	Unique:	False
	Fields:	SEP MOS, Ascending
Intensity		1
	Clustered:	False
	Distinct Count:	4
	Foreign:	False
	Ignore Nulls:	False
	Name:	Intensity
	Primary:	False
	Required:	False
	Unique:	False
	Fields:	Intensity, Ascending
PrimaryKey		3
	Clustered:	False
	Distinct Count:	4

Table: Policy Criteria Intensity

Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	Criteria, Ascending
Fields:	SEP MOS, Ascending
Fields:	Intensity, Ascending
ProgWeight	1
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	ProgWeight
Primary:	False
Required:	False
Unique:	False
Fields:	PolicyWeight, Ascending

Table: Program Criteria Intensity

Columns

Name	Type	Size
Criteria	Text	50
SEP MOS	Text	50
Intensity	Text	50
ProgWeight	Number (Double)	8

Relationships

Program Criteria IntensitySEPBillet

Program Criteria	SEPBillet
ProgWeight	ProgWeight

Attributes:	Not Enforced
Attributes:	Indeterminate

Table Indexes

Name	Number of Fields
Criteria IntensitySEP MOS	1

Clustered:	False
Distinct Count:	8
Foreign:	False
Ignore Nulls:	False
Name:	Criteria IntensitySEP MOS
Primary:	False
Required:	False
Unique:	False
Fields:	SEP MOS, Ascending

PrimaryKey 3

Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	Criteria, Ascending
Fields:	SEP MOS, Ascending
Fields:	Intensity, Ascending

ProgWeight 1

Clustered:	False
Distinct Count:	1
Foreign:	False
Ignore Nulls:	False
Name:	ProgWeight
Primary:	False
Required:	False
Unique:	False
Fields:	ProgWeight, Ascending

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Table: Research Criteria Intensity

Columns

Name	Type	Size
Criteria	Text	50
SEP MOS	Text	50
Intensity	Text	50
ResrchWeight	Number (Double)	8

Relationships

Research Criteria IntensitySEPBillet

Research Criteria	SEPBillet

ResrchWeight	ResrchWeight
Attributes:	Not Enforced
Attributes:	Indeterminate

Table Indexes

Name	Number of Fields
Criteria IntensitySEP MOS	1
Clustered:	False
Distinct Count:	2
Foreign:	False
Ignore Nulls:	False
Name:	Criteria IntensitySEP MOS
Primary:	False
Required:	False
Unique:	False
Fields:	SEP MOS, Ascending
PrimaryKey	3
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	Criteria, Ascending
Fields:	SEP MOS, Ascending
Fields:	Intensity, Ascending
ProgWeight	1
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	ProgWeight
Primary:	False
Required:	False
Unique:	False
Fields:	ResrchWeight, Ascending

Table: SEP Billet

Wednesday

Columns

Name	Type	Size
TblOrg	Text	50
Linenum	Text	50
SEPMOSNumber	Text	50

BilletTitle	Text	50
BilletHolderSSN_FK	Text	50
JSWeight	Number (Double)	8

Row Source: SELECT DISTINCTROW [Joint Criteria Intensity].[Intensity], [Joint Criteria Intensity].[JSWeight] FROM [Joint Criteria Intensity];
Source Field: JSWeight
Source Table: SEP Billet

ProgWeight	Number (Double)	8

Row Source: SELECT DISTINCTROW [Program Criteria Intensity].[Intensity], [Program Criteria Intensity].[ProgWeight] FROM [Program Criteria Intensity];
Source Field: ProgWeight
Source Table: SEP Billet

ResrchWeight	Number (Double)	8

Row Source: SELECT DISTINCTROW [Research Criteria Intensity].[Intensity], [Research Criteria Intensity].[ResrchWeight] FROM [Research Criteria Intensity];
Source Field: ResrchWeight
Source Table: SEP Billet

TechSkilWeight	Number (Double)	8

Row Source: SELECT DISTINCTROW [TechSkil Criteria Intensity].[Intensity], [TechSkil Criteria Intensity].[TechSkilWeight] FROM [TechSkil Criteria Intensity];
Source Field: TechSkilWeight
Source Table: SEP Billet

PolicyWeight	Number (Double)	8

Row Source: SELECT DISTINCTROW [Policy Criteria Intensity].[Intensity], [Policy Criteria Intensity].[PolicyWeight] FROM [Policy Criteria Intensity];
Source Field: PolicyWeight
Source Table: SEP Billet

EnvironWeight	Number (Double)	8

Row Source: SELECT DISTINCTROW [Environ Criteria Intensity].[Intensity],
[Environ

Criteria Intensity].[EnvironWeight] FROM [Environ Criteria Intensity];

Source Field: EnvironWeight

Source Table: SEP Billet

PMOSWeight Number (Double) 8

Row Source: SELECT DISTINCTROW [PMOS Criteria Intensity].[Intensity], [PMOS Criteria Intensity].[PMOSWeight] FROM [PMOS Criteria Intensity];

Source Field: PMOSWeight
Source Table: SEP Billet

EducatorWeight Number (Double) 8

Row Source: SELECT DISTINCTROW [Educator Criteria Intensity].[Intensity], [Educator Criteria Intensity].[EducatorWeight] FROM [Educator Criteria Intensity];

Source Field: EducatorWeight
Source Table: SEP Billet

MCC Text 50

RUC Text 50

Organization Text 50

Table Indexes

Name	Number of Fields
PrimaryKey	2
Clustered:	False
Distinct Count:	32
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	TblOrg, Ascending
Fields:	Linenum, Ascending
SEP BilletIn Lieu of 3-Way Comp Key	1
Clustered:	False
Distinct Count:	9
Foreign:	False
Ignore Nulls:	False
Name:	SEP BilletIn Lieu of 3-Way Comp Key
Primary:	False
Required:	False
Unique:	False
Fields:	JSWeight, Ascending
SEP BilletProgram 3-Way Comp Key	1

Clustered:	False
Distinct Count:	10
Foreign:	False
Ignore Nulls:	False
Name:	SEP BilletProgram 3-Way Comp Key
Primary:	False
Required:	False
Unique:	False
Fields:	ProgWeight, Ascending

Table: TechSkil Criteria Intensity

Columns

Name	Type	Size
Criteria	Text	50
SEP MOS	Text	50
Intensity	Text	50
TechSkilWeight	Number (Double)	8

Relationships

TechSkil Criteria IntensitySEPBillet

TechSkil Criteria	SEPBillet
TechSkilWeight	TechSkilWeight

Attributes:	Not Enforced
Attributes:	Indeterminate

Table Indexes

Name	Number of Fields
Criteria IntensitySEP MOS	1
Clustered:	False
Distinct Count:	1
Foreign:	False

Ignore Nulls:	False
Name:	Criteria IntensitySEP MOS
Primary:	False
Required:	False
Unique:	False
Fields:	SEP MOS, Ascending
PrimaryKey	3
Clustered:	False
Distinct Count:	4
Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	Criteria, Ascending
Fields:	SEP MOS, Ascending
Fields:	Intensity, Ascending
ProgWeight	1

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Table: TechSkil Criteria Intensity

Clustered:	False
Distinct Count:	1
Foreign:	False
Ignore Nulls:	False
Name:	ProgWeight
Primary:	False
Required:	False
Unique:	False
Fields:	TechSkilWeight, Ascending

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Table: Users

Columns

Name	Type	Size
User_ID	Number (Long)	4
Client_ID	Number (Long)	4
Username	Text	50
Password	Text	50
Name	Text	50

Table Indexes

Name	Number of Fields
Authentication_ID	1

Clustered:	False
Distinct Count:	3
Foreign:	False
Ignore Nulls:	False
Name:	Authentication_ID
Primary:	False
Required:	False
Unique:	False
Fields:	User_ID, Ascending

fn_Client_ID 1

Clustered:	False
Distinct Count:	2
Foreign:	False
Ignore Nulls:	False
Name:	fn_Client_ID
Primary:	False
Required:	False
Unique:	False
Fields:	Client_ID, Ascending

PrimaryKey 1

Clustered:	False
Distinct Count:	3

Table: Users

Foreign:	False
Ignore Nulls:	False
Name:	PrimaryKey
Primary:	True
Required:	True
Unique:	True
Fields:	User_ID, Ascending

Relationships: All

Relationships

BilletHolderSEPBillet

BilletHolder		SEPBillet
SSN	1 ∞	BilletHolderSSN_FK

Attributes:	One-To-Many
Attributes:	Enforced

Educator Criteria IntensitySEPBillet

Educator Criteria	SEPBillet
EducatorWeight	EducatorWeight

Attributes:	Indeterminate
Attributes:	Not Enforced

Environ Criteria IntensitySEPBillet

Environ Criteria	SEPBillet
EnvironWeight	EnvironWeight

Attributes:	Indeterminate
Attributes:	Not Enforced

EnvironCriteriaIntensitySEPBillet

EnvironCriteriaIntensity	SEPBillet
EnvironWeight	EnvironWeight

Attributes:	Not Enforced
Attributes:	Indeterminate

Joint Criteria IntensitySEPBillet

Joint Criteria Intensity	SEPBillet
JSWeight	JSWeight

Attributes:	Not Enforced
Attributes:	Indeterminate

PMOS Criteria IntensitySEPBillet

PMOS Criteria Intensity	SEPBillet
PMOSWeight	PMOSWeight

Attributes:	Indeterminate
Attributes:	Not Enforced

Policy Criteria IntensitySEPBillet

Policy Criteria Intensity	SEPBillet
PolicyWeight	PolicyWeight

Attributes:	Indeterminate
Attributes:	Not Enforced

Program Criteria IntensitySEPBillet

Program Criteria	SEPBillet

ProgWeight	ProgWeight

Attributes:	Indeterminate
Attributes:	Not Enforced

Research Criteria IntensitySEPBillet

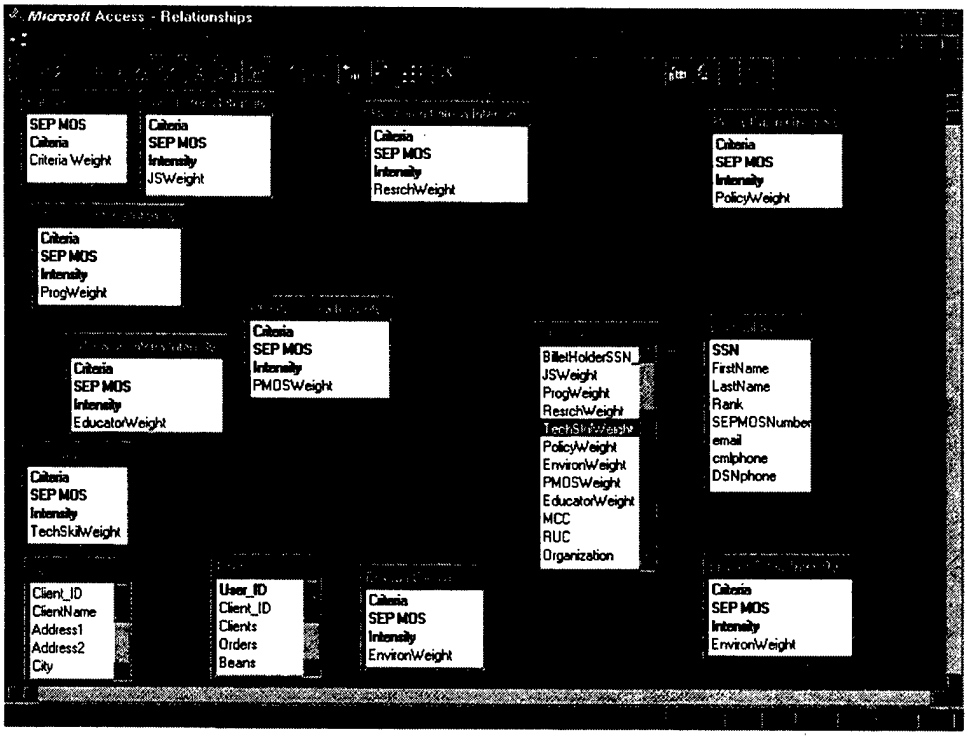
Research Criteria	SEPBillet
ResrchWeight	ResrchWeight

Attributes:	Indeterminate
Attributes:	Not Enforced

TechSkil Criteria IntensitySEPBillet

TechSkil Criteria	SEPBillet
TechSkilWeight	TechSkilWeight

Attributes:	Not Enforced
Attributes:	Indeterminate



APPENDIX E: MODEL DIAGRAMS

Validate a SEP Billet

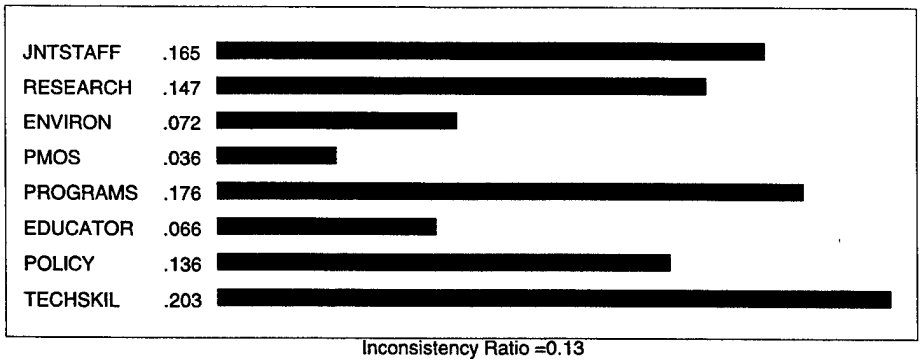
Node: 0

Compare the relative IMPORTANCE with respect to: GOAL

	RESEARCH	ENVIRON	PMOS	PROGRAMS	EDUCATOR	POLICY	TECHSKIL
JNTSTAFF	1.1	2.0	5.0	1.0	5.0	2.0	(2.0)
RESEARCH		2.0	5.0	1.0	6.0	1.0	(5.0)
ENVIRON			2.0	(5.0)	2.0	1.0	(3.0)
PMOS				(5.0)	1.0	(5.0)	(3.0)
PROGRAMS					1.0	1.0	2.0
EDUCATOR						1.0	(2.0)
POLICY							2.0

Row element is __ times more than column element unless enclosed in ()

Abbreviation	Definition
Goal	Validate a SEP Billet
JNTSTAFF	interaction with allied, joint, congressional or high level staff
RESEARCH	interaction with technical research laboratories
ENVIRON	work in a rapidly changing environment
PMOS	relevant to primary military occupation field
PROGRAMS	development and fielding of new and technical programs
EDUCATOR	instructor in academic institution requiring adv degree
POLICY	think tank
development of new policies and initiatives	
TECHSKIL	frequent use of technical skills & knowledge in technical domain



Inconsistency Ratio =0.13

Trial Use Only

Validate a SEP Billet

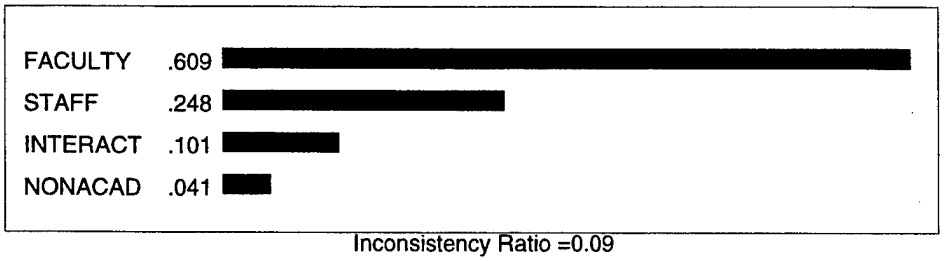
Node: 60000

Compare the relative IMPORTANCE with respect to: EDUCATOR < GOAL

1=EQUAL 3=MODERATE 5=STRONG 7=VERY STRONG 9=EXTREME

1	FACULTY	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	STAFF
2	FACULTY	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	INTERACT
3	FACULTY	(9)	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NONACAD
4	STAFF	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	INTERACT
5	STAFF	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	NONACAD
6	INTERACT	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	NONACAD

Abbreviation	Definition
Goal	Validate a SEP Billet
EDUCATOR	instructor in academic institution requiring adv degree
FACULTY	duty at an academic institution requiring adv degree
STAFF	duty at institution where adv degree advocated, e.g., NPS liaison
INTERACT	interact w/ academic institution where associates obtain adv degr
NONACAD	duties do not involve interaction with academic institution



Inconsistency Ratio =0.09

Validate a SEP Billet

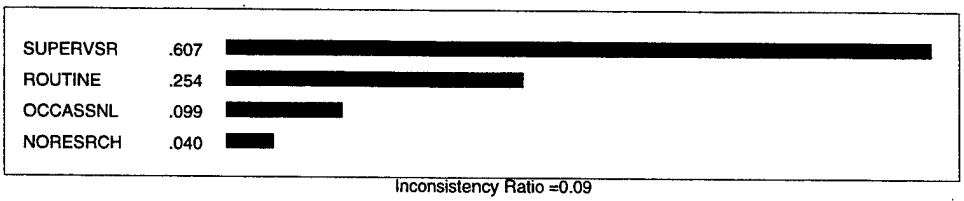
Node: 20000

Compare the relative IMPORTANCE with respect to: RESEARCH < GOAL

1=EQUAL 3=MODERATE 5=STRONG 7=VERY STRONG 9=EXTREME

1	SUPERVSR	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	ROUTINE
2	SUPERVSR	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	OCCASSNL
3	SUPERVSR	(9)	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NORESRCH
4	ROUTINE	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	OCCASSNL
5	ROUTINE	9	8	(7)	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NORESRCH
6	OCCASSNL	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	NORESRCH

Abbreviation	Definition
Goal	Validate a SEP Billet
RESEARCH	interaction with technical research laboratories
SUPERVSR	On staff at a research lab, e.g., NRAD, overseeing projects
ROUTINE	Routine customer of lab that frequently outsources work to lab
OCCASSNL	Outsource work to a research lab on an infrequent basis
NORESRCH	Duties do not involve interacting with research labs



Inconsistency Ratio =0.09

Trial Use Only

Validate a SEP Billet

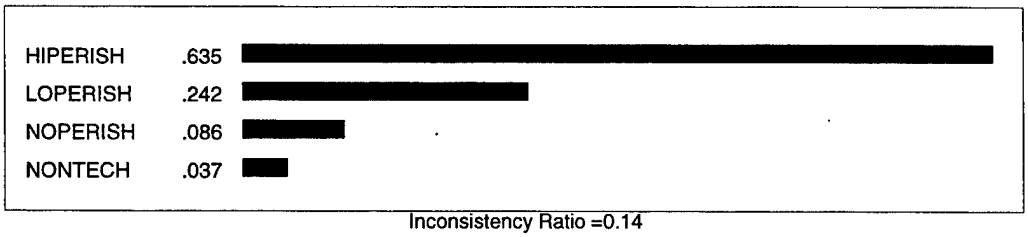
Node: 80000

Compare the relative IMPORTANCE with respect to: TECHSKIL < GOAL

1=EQUAL 3=MODERATE 5=STRONG 7=VERY STRONG 9=EXTREME

1	HIPERISH	9	8	7	6	(5)	4	3	2	1	2	3	4	5	6	7	8	9	LOPERISH
2	HIPERISH	9	8	(7)	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NOPERISH
3	HIPERISH	(9)	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NONTECH
4	LOPERISH	9	8	7	6	(5)	4	3	2	1	2	3	4	5	6	7	8	9	NOPERISH
5	LOPERISH	9	8	(7)	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NONTECH
6	NOPERISH	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	NONTECH

Abbreviation	Definition
Goal	Validate a SEP Billet
TECHSKIL	frequent use of technical skills & knowledge in technical domain
HIPERISH	duties require current, state of the art technical skills
LOPERISH	technical skills used have a life cycle longer than current tour
NOPERISH	Technical skills gained from degree are universal and timeless
NONTECH	duties do not require any technical skills



Inconsistency Ratio =0.14

Trial Use Only

Validate a SEP Billet

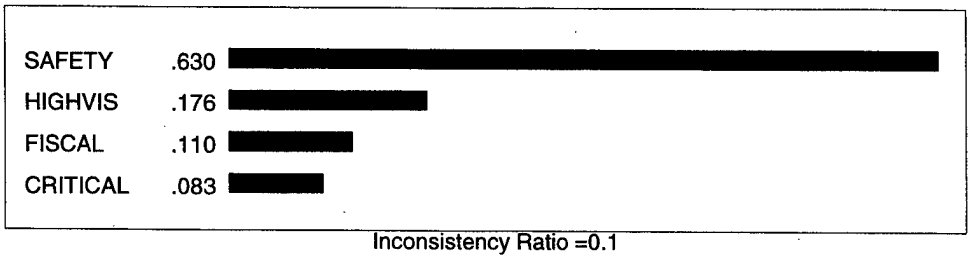
Node: 30000

Compare the relative IMPORTANCE with respect to: ENVIRON < GOAL

1=EQUAL 3=MODERATE 5=STRONG 7=VERY STRONG 9=EXTREME

1	SAFETY	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	HIGHVIS
2	SAFETY	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	FISCAL
3	SAFETY	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	CRITICAL
4	HIGHVIS	9	8	7	6	5	4	3	(2)	1	2	3	4	5	6	7	8	9	FISCAL
5	HIGHVIS	9	8	7	6	5	4	(3)	2	1	2	3	4	5	6	7	8	9	CRITICAL
6	FISCAL	9	8	7	6	5	4	3	(2)	1	2	3	4	5	6	7	8	9	CRITICAL

Abbreviation	Definition
Goal	'Validate a SEP Billet
ENVIRON	work in a rapidly changing environment
SAFETY	errant acts can result in loss of life
HIGHVIS	duties involve highly visible activities, e.g., White House, CMC
FISCAL	responsible for disbursing/appropriating large sums $
CRITICAL	maintanence and operation of a mission critical system, e.g. pay



Inconsistency Ratio =0.1

Trial Use Only

Validate a SEP Billet

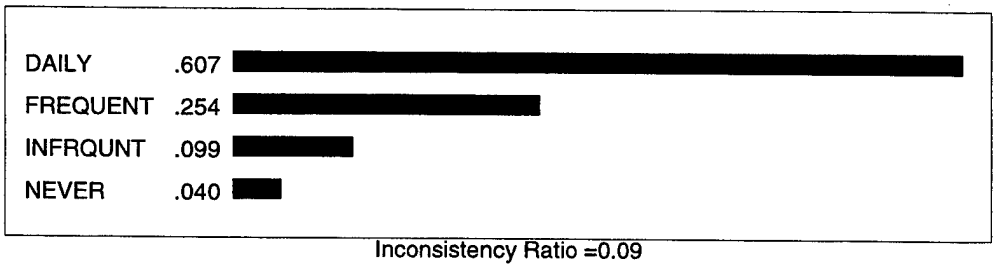
Node: 10000

Compare the relative IMPORTANCE with respect to: JNTSTAFF < GOAL

1=EQUAL 3=MODERATE 5=STRONG 7=VERY STRONG 9=EXTREME

1	DAILY	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	FREQUENT
2	DAILY	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	INFRQUNT
3	DAILY	(9)	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NEVER
4	FREQUENT	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	INFRQUNT
5	FREQUENT	9	8	(7)	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NEVER
6	INFRQUNT	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	NEVER

Abbreviation	Definition
Goal	Validate a SEP Billet
JNTSTAFF	interaction with allied, joint, congressional or high level staff
DAILY	Daily exchange with senior inter-service,congress/govt personnel
FREQUENT	Weekly exchange with senior inter-service,congress/govt personnel
INFRQUNT	Monthly exchange with senior interservice,congress/govt personnel
NEVER	No involvement with a joint staff



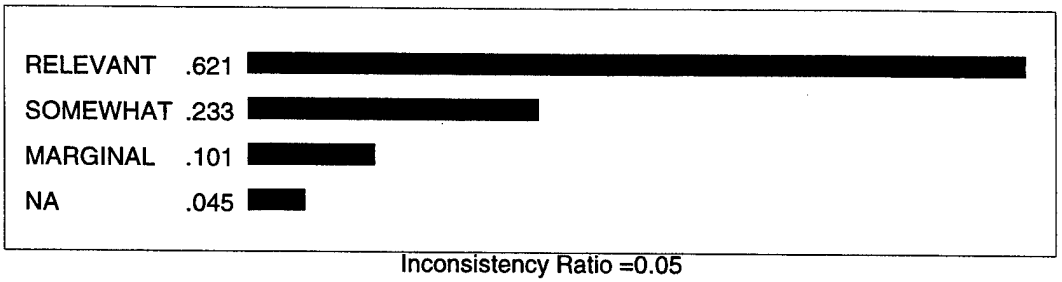
Inconsistency Ratio =0.09

Node: 40000

Compare the relative IMPORTANCE with respect to: PMOS < GOAL

	1=EQUAL	3=MODERATE			5=STRONG			7=VERY STRONG				9=EXTREME					
1	RELEVANT	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	SOMEWHAT
2	RELEVANT	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	MARGINAL
3	RELEVANT	(9)	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NA
4	SOMEWHAT	9	8	7	6	5	4	(3)	2	1	2	3	4	5	6	7	8	9	MARGINAL
5	SOMEWHAT	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	NA
6	MARGINAL	9	8	7	6	5	4	(3)	2	1	2	3	4	5	6	7	8	9	NA

Abbreviation	Definition
Goal	Validate a SEP Billet
PMOS	relevant to primary military occupation field
RELEVANT	daily activities are pertinant to PMOS skills
SOMEWHAT	some activities such as staff work are pertinant to PMOS skills
MARGINAL	minimal relevance to PMOS duties and skills
NA	no activities are applicable to PMOS skills and duties



Inconsistency Ratio =0.05

Validate a SEP Billet

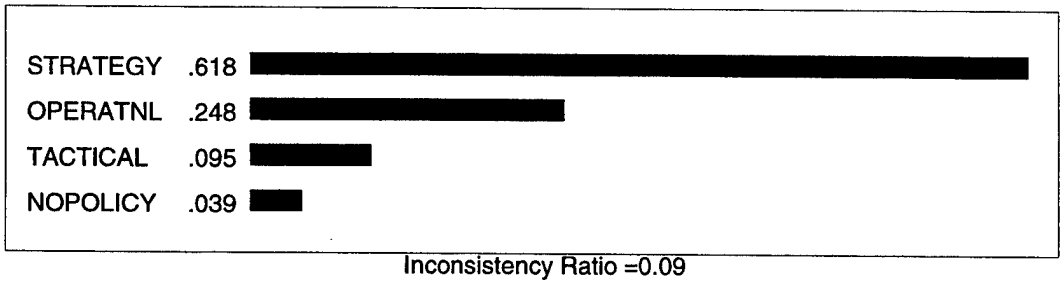
Node: 70000

Compare the relative IMPORTANCE with respect to: POLICY < GOAL

1=EQUAL 3=MODERATE 5=STRONG 7=VERY STRONG 9=EXTREME

1	STRATEGY	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	OPERATNL
2	STRATEGY	9	8	(7)	6	5	4	3	2	1	2	3	4	5	6	7	8	9	TACTICAL
3	STRATEGY	(9)	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NOPOLICY
4	OPERATNL	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	TACTICAL
5	OPERATNL	9	8	(7)	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NOPOLICY
6	TACTICAL	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	NOPOLICY

Abbreviation	Definition
Goal	Validate a SEP Billet
POLICY	think tank
development of new policies and initiatives	
STRATEGY	Long term, revolutionary concepts and senior level staffs
OPERATNL	Decisions will impact USMC in 1-2 years
TACTICAL	duties/decisions have short term, immediate and low level mpact
NOPOLICY	not involved in new initiatives or policy development



Inconsistency Ratio =0.09

Validate a SEP Billet

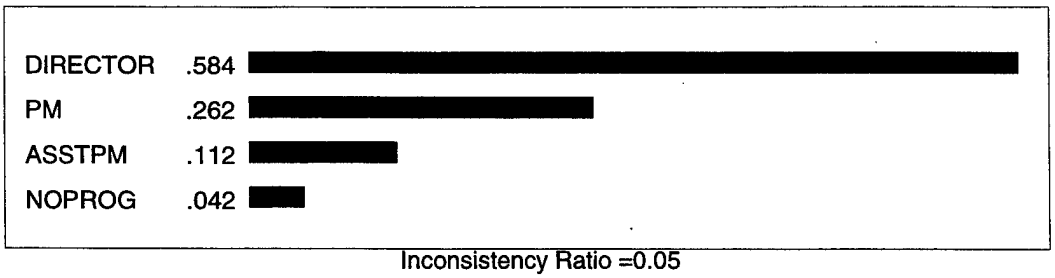
Node: 50000

Compare the relative IMPORTANCE with respect to: PROGRAMS < GOAL

1=EQUAL 3=MODERATE 5=STRONG 7=VERY STRONG 9=EXTREME

1	DIRECTOR	9	8	7	6	5	4	(3)	2	1	2	3	4	5	6	7	8	9	PM
2	DIRECTOR	9	8	7	(6)	5	4	3	2	1	2	3	4	5	6	7	8	9	ASSTPM
3	DIRECTOR	(9)	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NOPROG
4	PM	9	8	7	6	5	4	(3)	2	1	2	3	4	5	6	7	8	9	ASSTPM
5	PM	9	8	(7)	6	5	4	3	2	1	2	3	4	5	6	7	8	9	NOPROG
6	ASSTPM	9	8	7	6	5	(4)	3	2	1	2	3	4	5	6	7	8	9	NOPROG

Abbreviation	Definition
Goal	Validate a SEP Billet
PROGRAMS	development and fielding of new and technical programs
DIRECTOR	supervise and lead subordinate PM's on multi-faceted project
PM	Project Manager overseeing development and fielding of new equip
ASSTPM	Conduct staff work on a major project
NOPROG	Duties do not involve project/program development



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